LCD Television
Service Manual

Chassis： MT K8223L

Product Type：LCD24V88AP/LCD24V86LPAM/LCD24T28PAM.....

Ver 1.0

Hisense Electric Co.，Ltd.

September，2011

Contents

Service Manual

1. Precautions and notices

BEFORE SERVICING THE LCD TV, READ THE SAFETY PRECAUTIONS IN THIS MANUAL.

WHEN REPLACEMENT PARTS ARE REQUIRED, BE SURE TO USE REPLACEMENT PARTS SPECIFIED BY THE MANUFACTURER.

Proper service and repair is important to the safe, reliable operation of all Hisense Electric Co., Ltd Equipment. The service procedures recommended by Hisense and described in this Service Guide are effective methods of performing service operations. Some of these service operations require the use of tools specially designed for the purpose. The special tools should be used when and as recommended.

It is important to note that this manual contains various CAUTIONS and NOTICES which should be carefully read in order to minimize the risk of personal injury to service personnel. The possibility exists that improper service methods may damage the equipment. It is also important to understand that these CAUTIONS and NOTICES ARE NOT EXHAUSTIVE. Hisense could not possibly know, evaluate and advise the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each way. Consequently, Hisense has not undertaken any such broad evaluation. Accordingly, a serviceman that uses a service procedure or tools,

which are not recommended by Hisense, must first satisfy himself thoroughly that neither his safety nor the safe of the equipment will be jeopardized by the service method selected.

Hereafter throughout this manual, Hisense Electric Co., Ltd will be referred to as Hisense.

1.1 Warning

1.1.1

Critical components having special safety characteristics are identified with a ⚠ by the Ref. No. in the parts list. Use of substitute replacement parts, which do not have the same specified safety characteristics, may create shock, fire, or other hazards.

Under no circumstances should the original design be modified or altered without written permission from Hisense. Hisense assumes no liability, express or implied, arising out of any unauthorized modification of design. Serviceman assumes all liability.

> DANGER CAUTION
>
> TO ENSURE THE CONTINUED RELIABILITY OF THIS PRODUCT, USE ONLY ORIGINAL MANUFACTURER'S REPLACEMENT PARTS, WHICH ARE LISTED WITH THEIR PART NUMBERS IN THE PARTS LIST SECTION OF THIS SERVICE GUIDE.

1.1.2.

All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically. When repairing, make sure

that you are connected with the same potential as the mass of the set by a wristband with resistance. Keep components and tools also at this same potential.

1. Never replace modules or other components while the unit is switched on.

2. When making settings, use plastic rather than metal tools. This will prevent any short circuits and the danger of a circuit becoming unstable.

1.1.3

To prevent electrical shock, do not use this polarized ac plug with an extension cord, receptacle, or the outlet unless the blades can be fully inserted to prevent blade exposure. To prevent electrical shock, match wide blade or plug to wide slot, fully insert.

1.1.4

When replacement parts are required, be sure to use replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.

1.1.5

Safety regulations require that after a repair the set must be returned in its original condition. In particular attention should be paid to the following points.

-Note: The wire trees should be routed correctly and fixed with the mounted cable clamps.

-The insulation of the mains lead should be checked for external damage.

1.1.6

(1) Do not touch Signal and Power Connector while this product operates. Do not

touch EMI ground part and Heat Sink of Film Filter.

(2) Do not supply a voltage higher than that specified to this product. This may damage the product and may cause a fire.

(3) Do not use this product in locations where the humidity is extremely high, where it may be splashed with water, or where flammable materials surround it. Do not install or use the product in a location that does no satisfy the specified environmental conditions. This may damage the product and may cause a fire.

(4) If a foreign substance (such as water, metal, or liquid) gets inside the panel module, immediately turn off the power. Continuing to use the product may cause fire or electric shock.

(5) If the product emits smoke, and abnormal smell, or makes an abnormal sound, immediately turn off the power. Continuing to use the product, it may cause fire or electric shock.

(6) Do not disconnect or connect the connector while power to the product is on. It takes some time for the voltage to drop to a sufficiently low level after the power has been turned off. Confirm that the voltage has dropped to a safe level before disconnecting or connecting the connector.

(7) Do not pull out or insert the power cable from/to an outlet with wet hands. It may cause electric shock.

(8) Do not damage or modify the power cable. It may cause fire or electric shock.

(9) If the power cable is damaged, or if the connector is loose, do not use the product:

otherwise, this can lead to fire or electric shock.

(10) If the power connector or the connector of the power cable becomes dirty or dusty, wipe it with a dry cloth. Otherwise, this can lead to fire.

(11) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

1.2 Notes

Notes on Safe Handling of the LCD panel and during service

The work procedures shown with the Note indication are important for ensuring the safety of the product and the servicing work. Be sure to follow these instructions.

• Before starting the work, secure a sufficient working space.

• At all times other than when adjusting and checking the product, be sure to turn OFF the POWER Button and disconnect the power cable from the power source of the TV during servicing.

• To prevent electric shock and breakage of PC board, start the servicing work at least 30 seconds after the main power has been turned off. Especially when installing and removing the power board, start servicing at least 2 minutes after the main power has been turned off.

• While the main power is on, do not touch any parts or circuits other than the ones specified. If any connection other than the one specified is made between the measuring

equipment and the high voltage power supply block, it can result in electric shock or activation of the leakage-detection circuit breaker.

• When installing the LCD module in, and removing it from the packing carton, be sure to have at least two persons perform the work.

• When the surface of the panel comes into contact with the cushioning materials, be sure to confirm that there is no foreign matter on top of the cushioning materials before the surface of the panel comes into contact with the cushioning materials. Failure to observe this precaution may result in, the surface of the panel being scratched by foreign matter.

• When handling the circuit board, be sure to remove static electricity from your body before handling the circuit board.

• Be sure to handle the circuit board by holding the large parts as the heat sink or transformer. Failure to observe this precaution may result in the occurrence of an abnormality in the soldered areas.

• Do not stack the circuit boards. Failure to observe this precaution may result in problems resulting from scratches on the parts, the deformation of parts, and short-circuits due to residual electric charge.

• Routing of the wires and fixing them in position must be done in accordance with the original routing and fixing configuration when servicing is completed. All the wires are routed far away from the areas that become hot (such as the heat sink). These wires are fixed in position with the wire clamps so that the wires do not move, thereby ensuring

that they are not damaged and their materials do not deteriorate over long periods of time. Therefore, route the cables and fix the cables to the original position and states using the wire clamps.

• Perform a safety check when servicing is completed. Verify that the peripherals of the serviced points have not undergone any deterioration during servicing. Also verify that the screws, parts and cables removed for servicing purposes have all been returned to their proper locations in accordance with the original setup.

The lightning flash with arrowhead symbol, within an equilateral triangle is intended to alert the user to the presence of uninsulated dangerous voltage within the products enclosure that may be of sufficient magnitude to constitute a risk of electric shock.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the set.

2. Product Function Specifications

Pr oduct Function

Nombre de Modelo		24 inch
Dimensión (W×H×D)(mm)	Sin soporte	596X404X37.5
	Con soporte	596X452X160
Peso (kg)	Sin soporte	6.2
	Con soporte	7.5
Tamaño Mínimo de Panel LCD (diagonal)mm		60
Resolución de Pantalla		1920x1080
Consumo de electricidad		30W
Fuente de alimentción		100-240V~ 50/60Hz
Sistemas de Recepción	RF	NTSC-M PAL-N/M
	AV	NTSC PAL
Condiciones ambientales		Temperatura:5°~ 35°C Humedad: 20%-80% RH, Presión atmosférica: 86kPa-106kPa.
Entrada de Componente		480I、480P、576I、576P 720P/50Hz、720P/60Hz、1080I/50Hz、1080I/60Hz 1080P/50Hz、1080P/60Hz
Entrada VGA		VGA（640×480 60Hz）、SVGA（800×600 60Hz） XGA（1024×768 60Hz）
Entrada HDMI		RGB/60Hz（640×480、800×600、1024×768） YUV/50Hz（576P、720P、1080I、1080P） YUV/60Hz（480I、480P、720P、1080I、1080P）

Specification

Model Name		LCD32V66B
Dimension (W×H×D)(mm)	Without stand	788×508×93
	With stand	788×565×242
Weight(kg)	Without stand	9
	With stand	9.5
LCD Panel Minimum size(diagonal)		80
Screen resolution		1366×768
Power consumption		100W
Audio power		6W+6W
Power supply		100–240V~ 50/60HZ
Receiving systems	RF	PAL, SECAM, BG/DK/I
	AV	PAL, SECAM, NTSC
Component Input		480I、480P、576I、576P 720P/50Hz、720P/60Hz、1080I/50Hz、1080I/60Hz
VGA Input		VGA（640×480 60Hz）、SVGA（800×600 60Hz） XGA（1024×768 60Hz）
HDMI Input		RGB/60Hz（640×480、800×600、1024×768） YUV/50Hz（576P、720P、1080I） YUV/60Hz（480I、480P、720P、1080I）

3. Factory/Service OSD Menu and Adjustment

3.1 To enter the Factory OSD Menu

a. With factory RC (remote control)

1. Press “M” button and enter factory mode.
2. Press “Menu” button and enter factory OSD menu.
3. Press “CH+”/“CH-” button select the function menu, press “VOL+”/“VOL-” enter the selected function menu. Press “VOL+”/“VOL-” button adjust values in the menu.

b. With user’s RC

1. Power TV On
2. Press Menu button and call up User OSD Menu
3. Select Audio-> Balance0
4. Enter 1->9->6 ->9 in sequence.
   Note: If necessary, re-do number keys.
5. Factory OSD appears.
6. Press Menu again and leave factory OSD.

3.2 Factory OSD Menu

3.2.1 White Balance

Note: Different source has different WB values. Before adjusting, please change to desired source.

3.2.2 Factory Option

Item 0	Item 1	Note
White Balance	R DRV	Red Driver adjust
	G DRV	Green Driver adjust
	B DRV	Blue Driver adjust
	R CUT	Red Cut adjust
	G CUT	Green Cut adjust
	B CUT	Blue Cut adjust
Note: Before adjusting, please change to desired source. Different source has different WB values.		
Set Channel	Zhong Shi	Qingdao Jiangxi Road factory
	Huang Dao	Huangdao Industrial Park
Color TemP	Color Temp	**Standard\cool\warm**
	R Gain	
	G Gain	
	B Gain	
Video cruve		
Factory Option	To FAC	M-Can enter factory mode with factory RC or user RC. U-Can enter factory mode only with user's RC.
	Logo Option	Logo Selection
	OSD	English
MODE "M" is only used for factory production.		
Version Info		
	Version:	Current Software version
	Date:	The date of current version
Note: Software version info of the TV, readable only.		
Clean Protected		Clean data except WB data and Auto Color data
Clean All		Clean all data

Note: The factory menu date varies according to different sources. Incase changing the factory data by error, you can choose to "Clean Protected", by which you can resume the default value.

To clear the EEPROM:

a. Select the item “Clean All”.

b. Press VOL+ button to clear the EEPROM data.

c. Close the OSD menu after 5 seconds.

d. Restart the TV.

3.3 Designer Menu

Item 0	Item 1	Item 2	Note
Designer Menu	Video Curve	Brightness Min	Min Brightness
		Brightness Mid	Mid Brightness
		Brightness Max	Max Brightness
		Contrast Min	Min Contrast
		Contrast Mid	Mid Contrast
		Contrast Max	Max Contrast s
		Saturation Min	Min Saturation
		Saturation Mid	Mid Saturation
		Saturation Max	Max Saturation
	Picture Mode	SOURCE	The current program source
		VIVID Brightness	Brightness of VIVID mode
		VIVID Contrast	Contrast of VIVID mode
		VIVID Saturation	Saturation of VIVID mode
		STD Brightness	Brightness of STD mode
		STD Contrast	Contrast of STD mode
		STD Saturation	Saturation of STD mode
		MOVIE Brightness	Brightness of Movie mode
		MOVIE Contrast	Contrast of Movie mode
		MOVIE Saturation	Saturation of Movie mode
Sound Mode	Volume Curve	Volume Min	When value is 1 Think about the

			Audio out power before adjusting
		Volume 25	When value is 25 Think about the Audio out power before adjusting
		Volume Mid	When value is 50 Think about the Audio out power before adjusting
		Volume 75	When value is 75 Think about the Audio out power before adjusting
		Volume Max	When value is 100 Think about the Audio out power before adjusting
	Audio Mode	Audio Mode	Standard 、 user 、 Music 、 Speech, Music
		120HZ	Different frequencies for different Audio Mode
		500HZ	
		1.5kHZ	
		5kHZ	
		10kHZ	

The above “Factory/Service OSD Menu” are reference only, please refer to the actual units to determine the appearances.

4 Software Upgrading

The first upgrading method:

The software is upgraded by a burning tool-MtkTool, which can burn the program file *.bin to the main board of the unit.

4.1 Get ready for upgrading

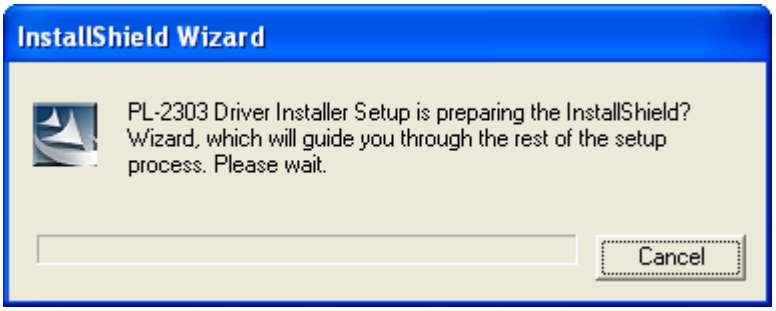
4.1.1 Install the driver


PL-2303 Driver Installer.rar


cp210x_driver.rar


Mtktool2.48.05.rar

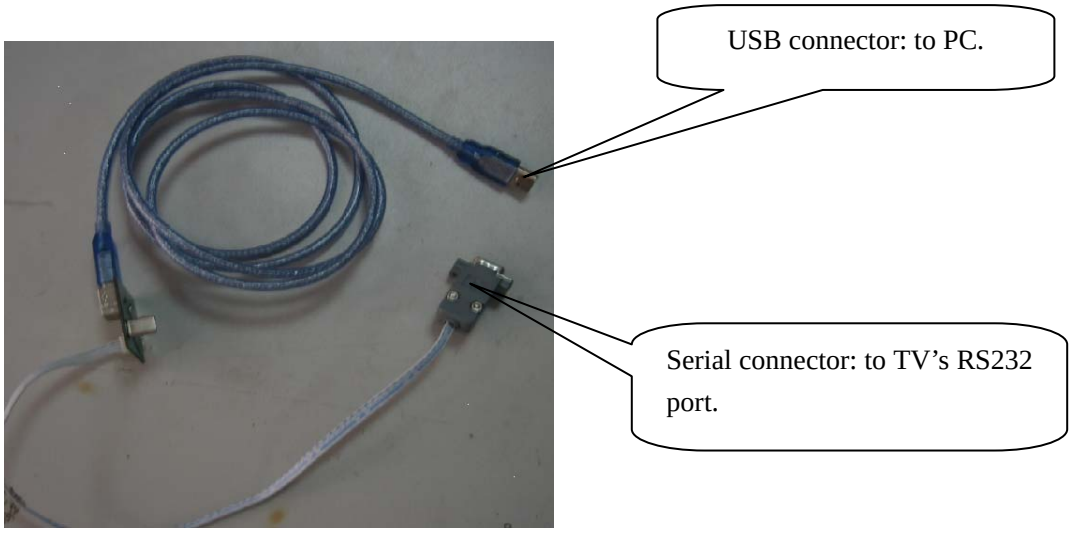
Double click the icon(PL-2303 or CP210X), install the driver.



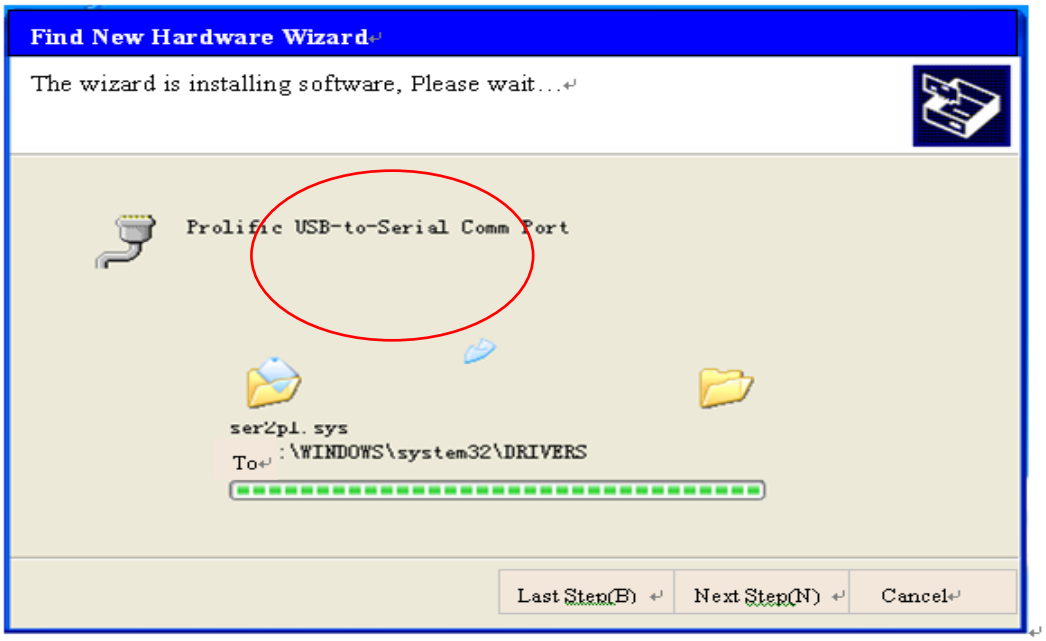
Select the default value, the driver will be installed step by step.

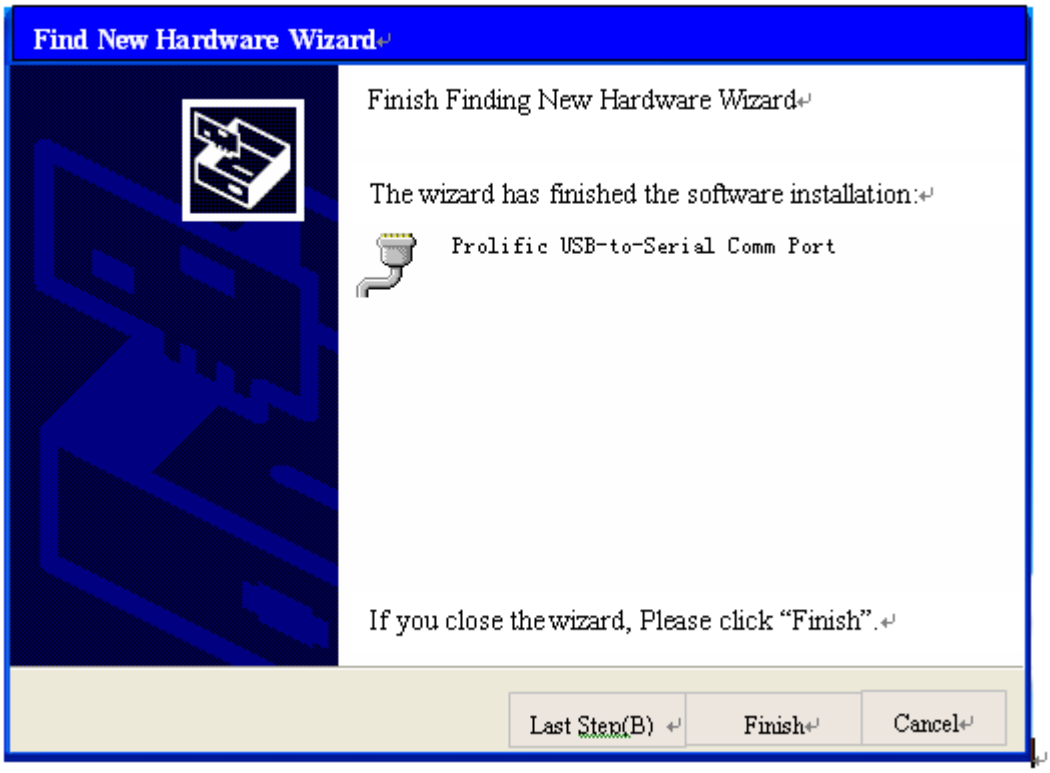
4.1.2 Hardware connecting

Connect the unit to your pc with a USB-to-serial port cable. USB port connects to your pc, and serial port to the TV's RS232 port.



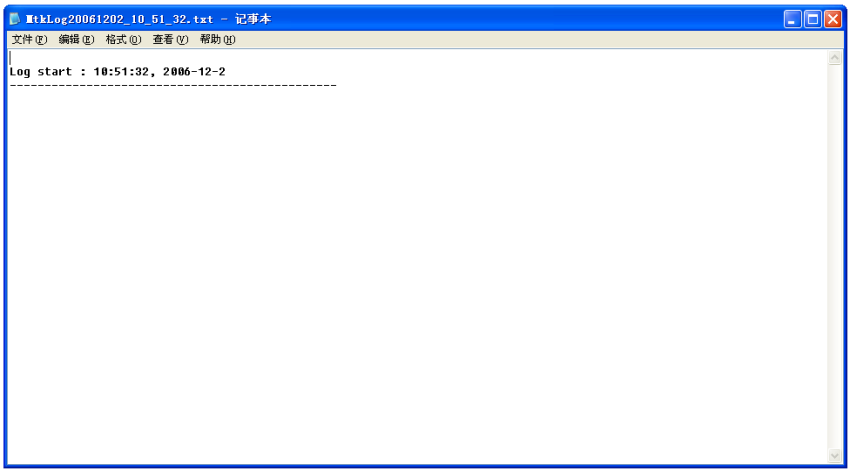
For the first connecting, the pc will recognize and automatically install the USB device. The process is just like the installation of a mini disk, see the following picture.





4.2 Upgrading with the MtkTool

MTKtool is a green program needing no installation.
The MtkTool using log is restored in the MtkLog folder. It records the running time and date whenever the tool is used. The log will be a txt file named by the date and time.



After connecting the TV with your PC, double click  MtkTool.exe icon, open the MtkTool.

If following error appears, it means the related port is not be set properly.

Ignore these errors, click “Confirm” and enter the MtkTool main interface, see the following picture. Flash chip model

Please refer to follow steps to update the software:

1—Select mode of Flash chip to MT8223 as the below picture.

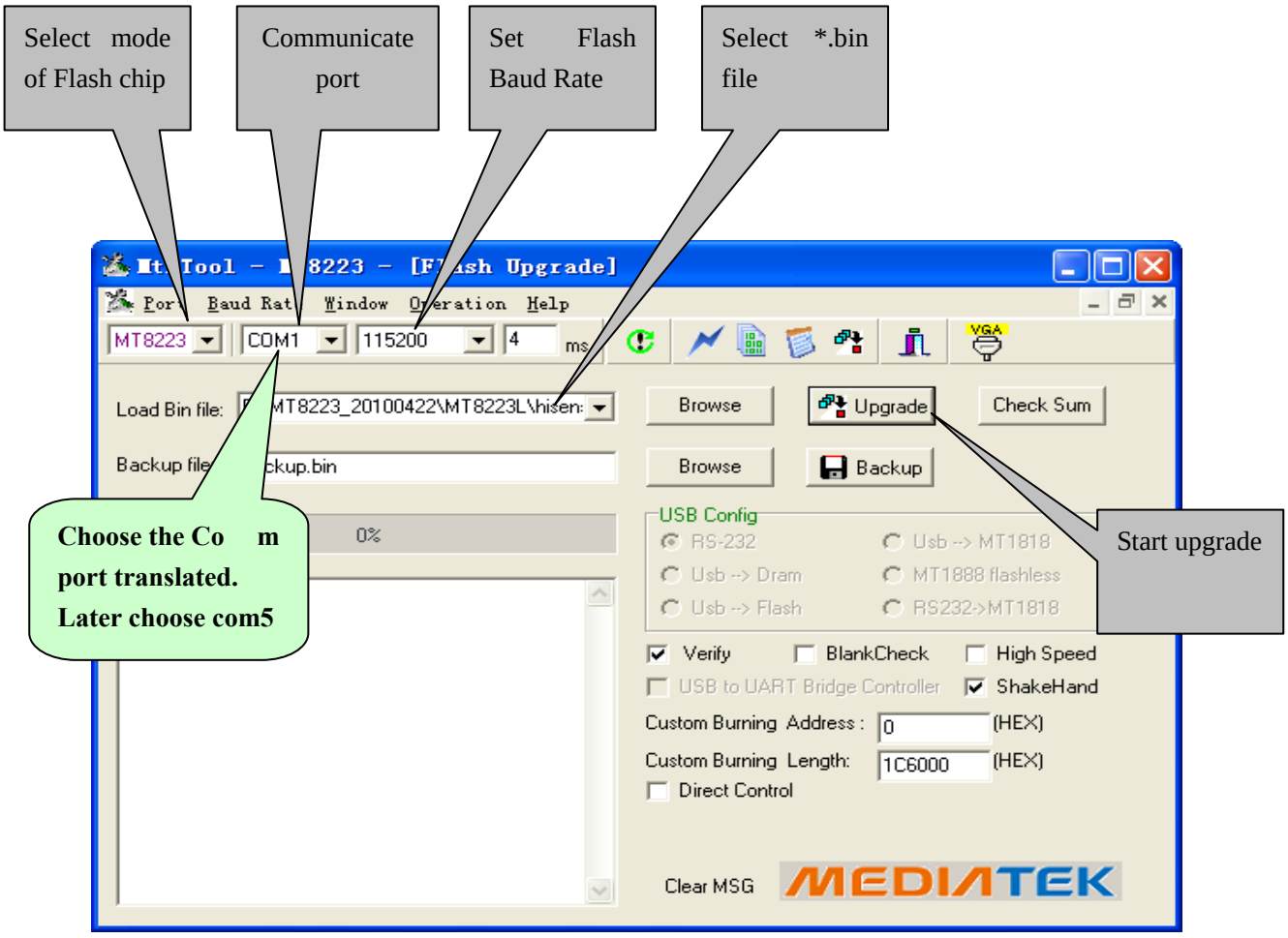
2—Refer to the next page instruction to select the communicate port.

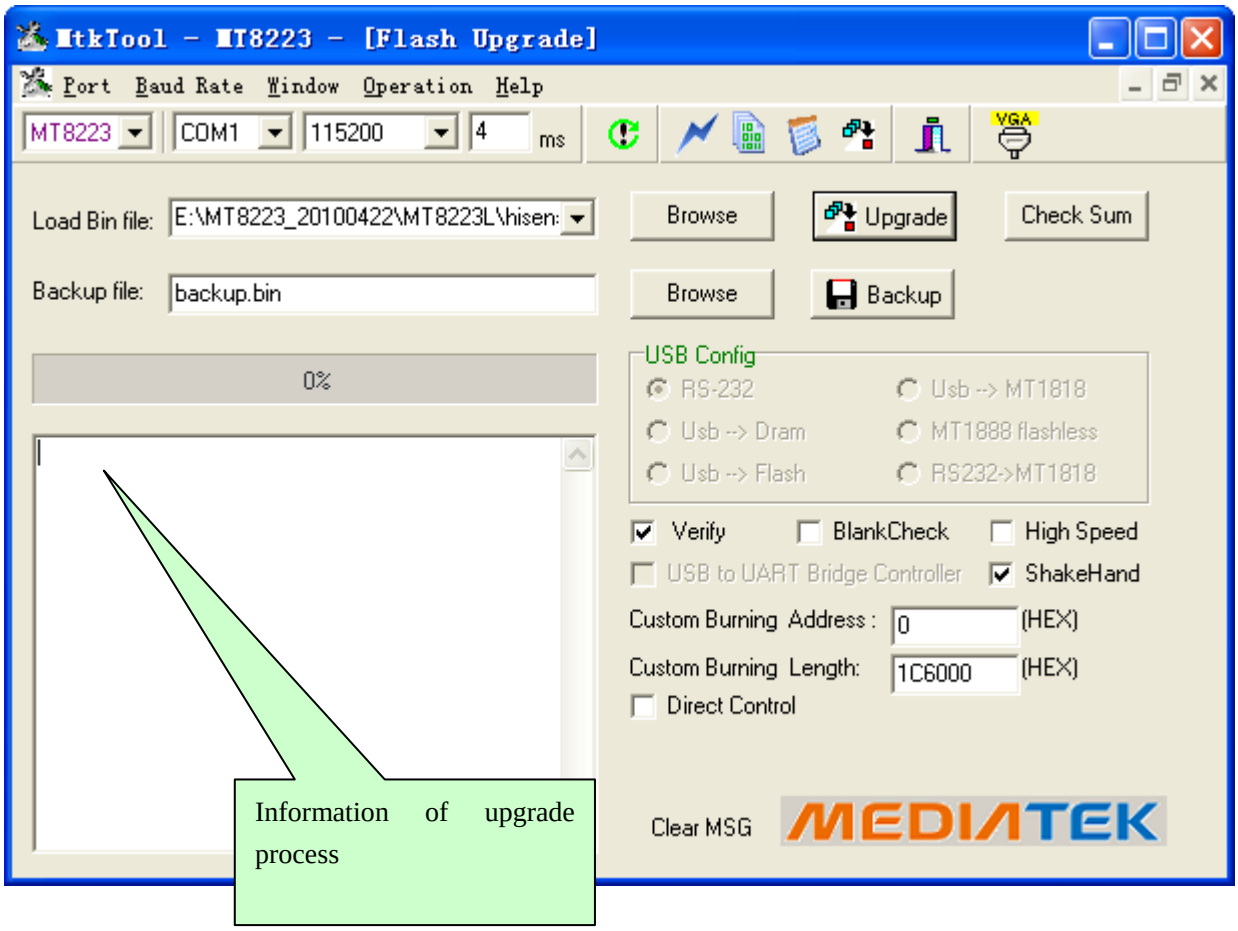
3—Press the icon beside the baud rate and make sure it is green as the below picture.

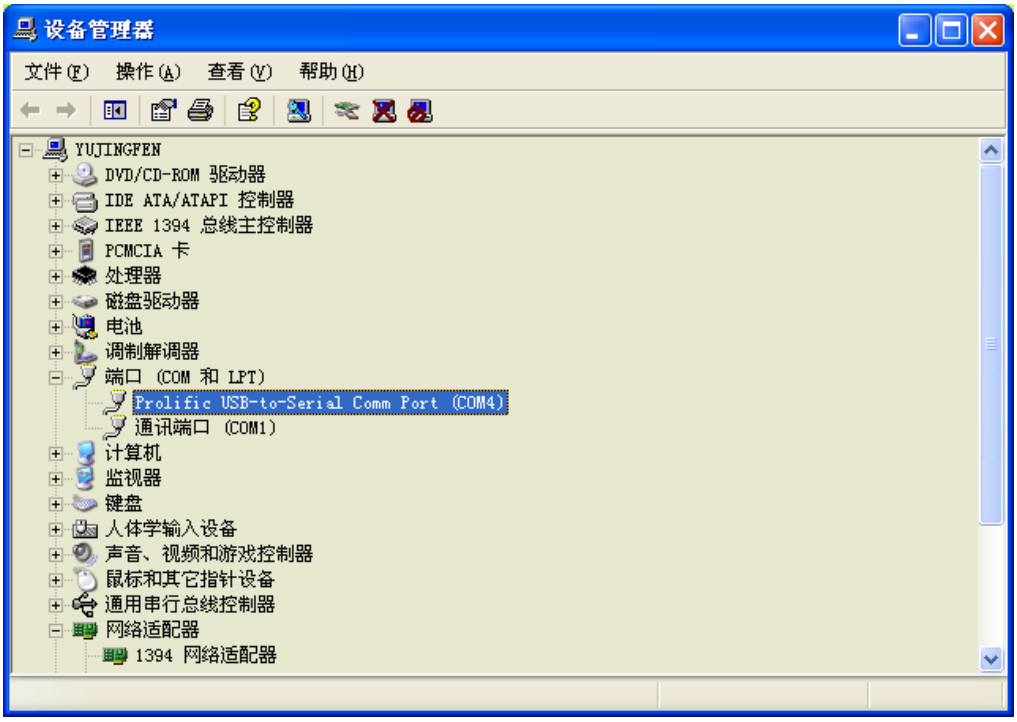
4—Set the flash baud rate to 115200 as the below picture.

5—Click the browse button to select the *.bin file that will be updated.

6—Click the “Upgrade” button to update software.

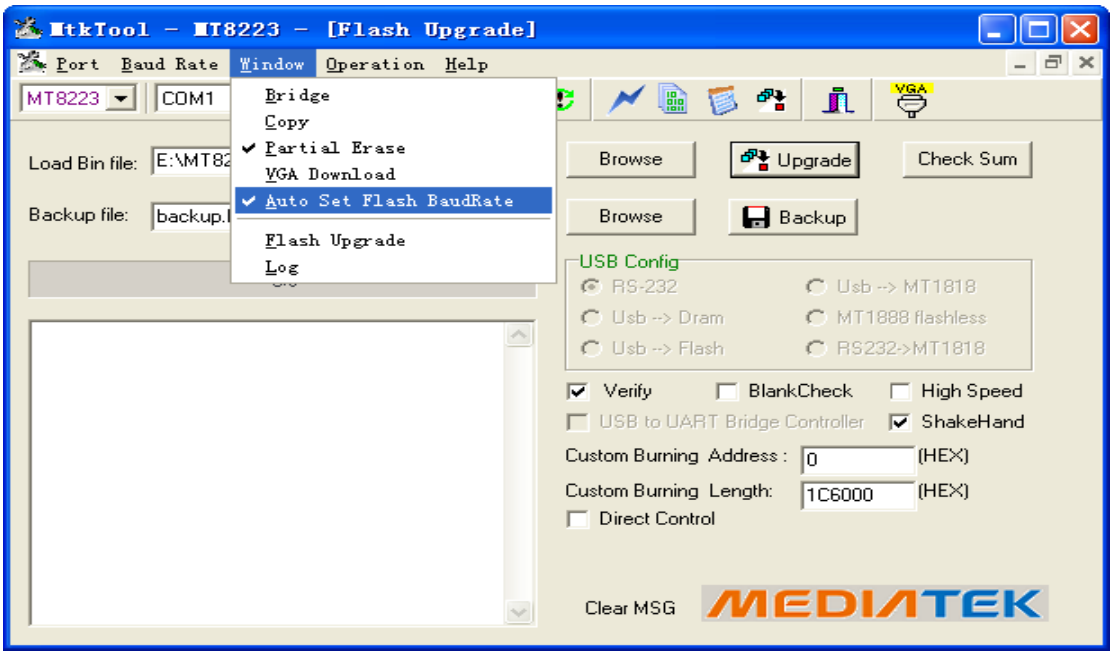

Select mode of Flash chip
Communicate port
Set Flash Baud Rate
Select *.bin file
Choose the Co m port translated. Later choose com5
Start upgrade
MT8223
COM1
115200
4
ms
Load Bin file:
Browse
Upgrade
Check Sum
Backup file
Browse
Backup
0%
USB Config
RS-232
Usb --> MT1818
Usb --> Dram
MT1888 flashless
Usb --> Flash
RS232->MT1818
Verify
BlankCheck
High Speed
USB to UART Bridge Controller
ShakeHand
Custom Burning Address :
0
(HEX)
Custom Burning Length:
1C6000
(HEX)
Direct Control
Clear MSG
MEDIATEK


MtkTool - MT8223 - [Flash Upgrade]
Port Baud Rate Window Operation Help
MT8223
COM1
115200
4
ms
VGA
Load Bin file:
E:\MT8223_20100422\MT8223L\hisen:
Browse
Upgrade
Check Sum
Backup file:
backup.bin
Browse
Backup
0%
USB Config
RS-232
Usb --> MT1818
Usb --> Dram
MT1888 flashless
Usb --> Flash
RS232->MT1818
Verify
BlankCheck
High Speed
USB to UART Bridge Controller
ShakeHand
Custom Burning Address :
0
(HEX)
Custom Burning Length:
1C6000
(HEX)
Direct Control
Clear MSG
MEDIATEK
Information of upgrade process



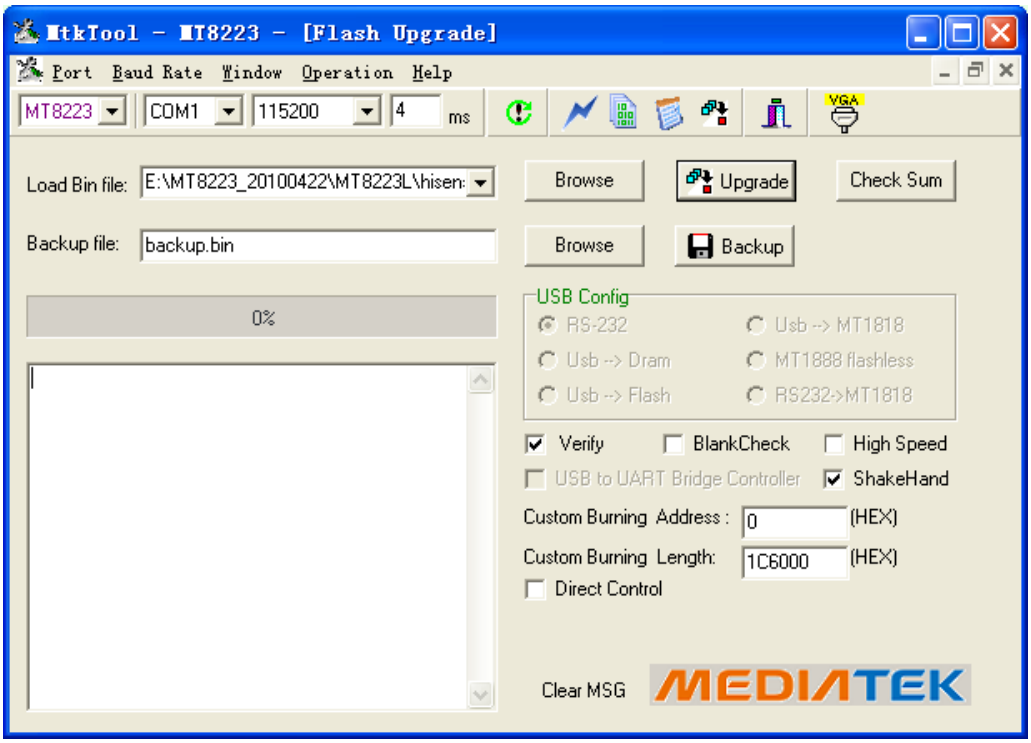
Open “Device Manager” and find which port is connected with the TV. In this operation, COM5 is connected to the TV; so, select “COM5” in the MtkTool main interface. Select the right baud rate according to chip model. For this unit(chip model is MT8226), select 115200..So choose “Auto Set Flash BaudRate”

Note: Whether or not c lick the “Auto Se t Flash Baud Ra te” in the “w indow” menu depends on the chip type. If the flash chip does not support high speed transport, do not select this option; otherwise, reserve the selected mood.



Click “Browse” button, find the upgrading program file, and select it. Press “Upgrade” button and start upgrading.

The following interface appears on the screen, indicating upgrading successfully.

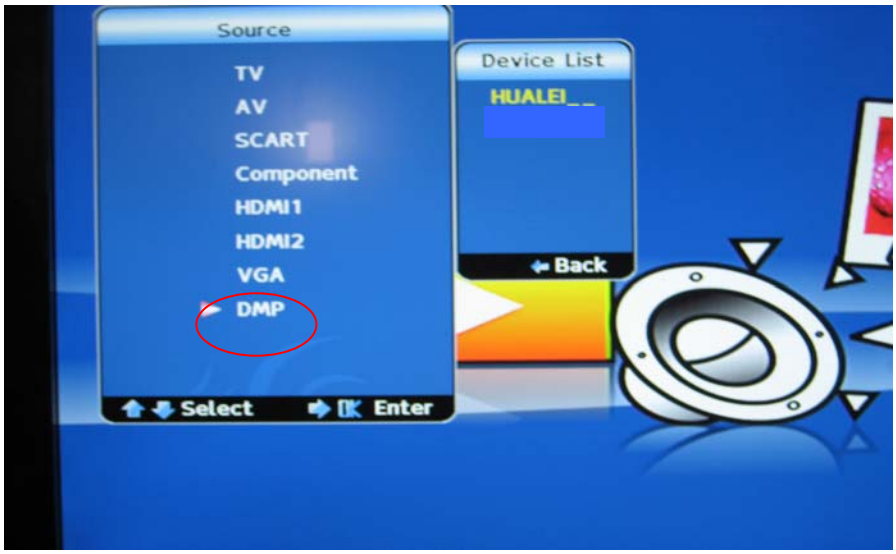


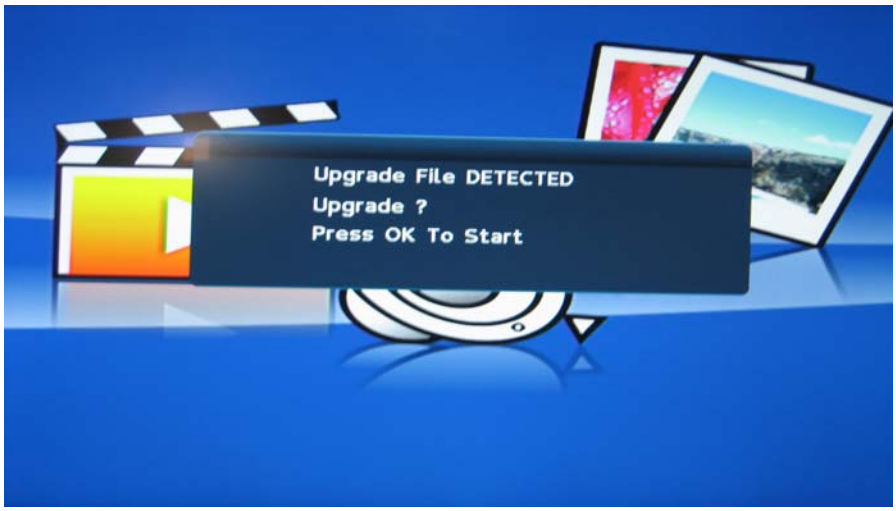
4.3 Update with USB directly

4.3.1 Update with USB directly（by DMP Source）

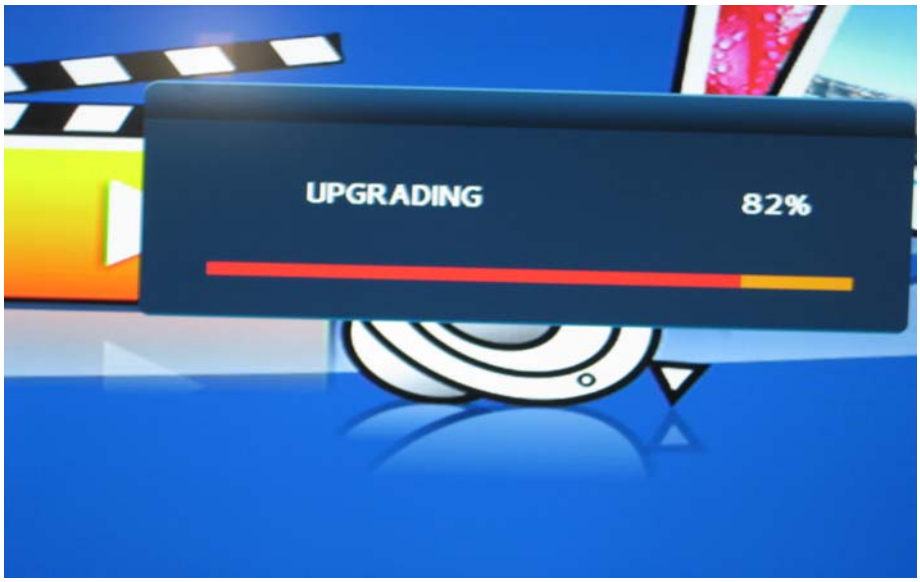
MTK8223 Series can update with USB, the software named HISENSE.bin. The Updating Steps is set the Source to "DMP interface", insert the USB (HISENSE.bin. should be in root directory),The TV automatic identify the upgrading software. step by step, according as the informations of the upgrading process.

(USB to the Main board directly , the figure is only for reference)





Select “OK” on the Remote control



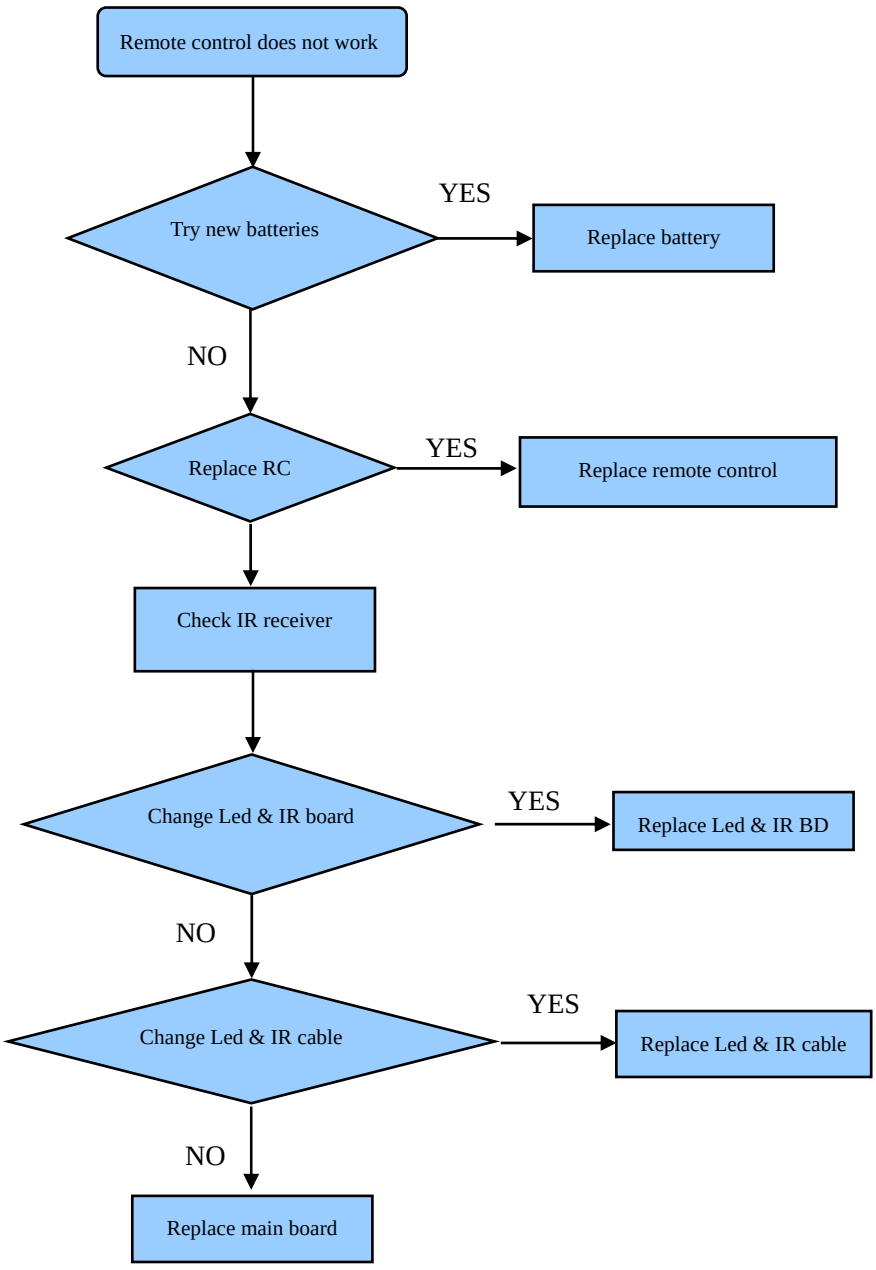
After upgrading, TV can automatically r estart .you must confirm the softw are in the Factory Menu and you'd better "CLEAR ALL".

5. Troubleshooting

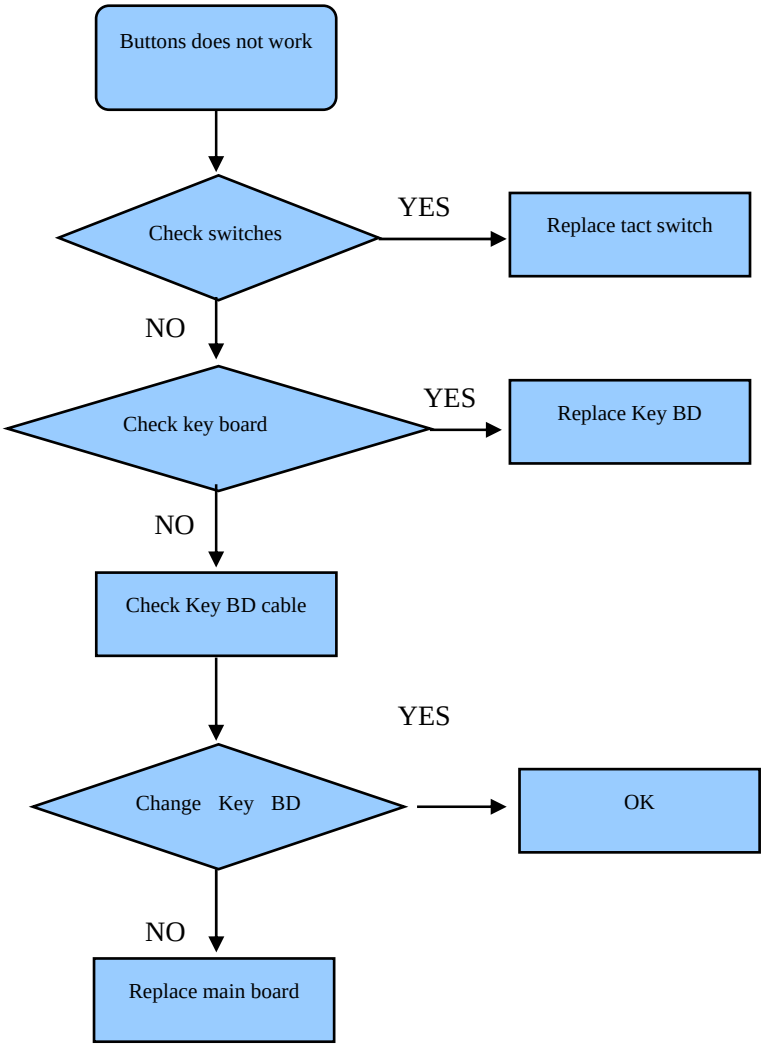
When there is something wrong with you TV, you can try turning off the TV and then restart it. You can also operate according to the following chart.

No sound or picture	1. Check if the power line is in the outlet and if it has electricity. 2. Check if you have pressed Power button on the TV or Power button on the remote control. 3. Check the setting of picture brightness and contrast. 4. Check the volume.
The picture is normal but there is no sound	1. Check the volume. 2. Check if Mute mode is set.
No picture and white or black picture	1. Adjust Picture Setting. 2. Check Color System.
The sound and picture are interfered	1. Try to find the appliance affecting TV set, and move it far away from the TV set. 2. Try to insert the power plug of the TV set into another outlet.
Unclear picture or picture with snow	1. Check the direction, position and connection of your antenna. 2. Adjust the direction of your antenna or reset or fine tune the channel.
The remote control does not work	1. Change the batteries in the remote control. 2. Clean the upper side of the remote control (radiating window) 3. Check the contacting points of the batteries. 4. Check if there is obstruction between the remote control and the monitor. 5. Check if the batteries are correctly installed.
H/V strip or the picture shaking	Check if there is interfering source nearby, such as appliance or electric tools.
The cabinet of the TV makes "Click" sound	makes "Click" sound"Sometimes the room temperature change can cause the television cabinet to inflate or contra, which makes the sound. This does not mean the TV breaks down.

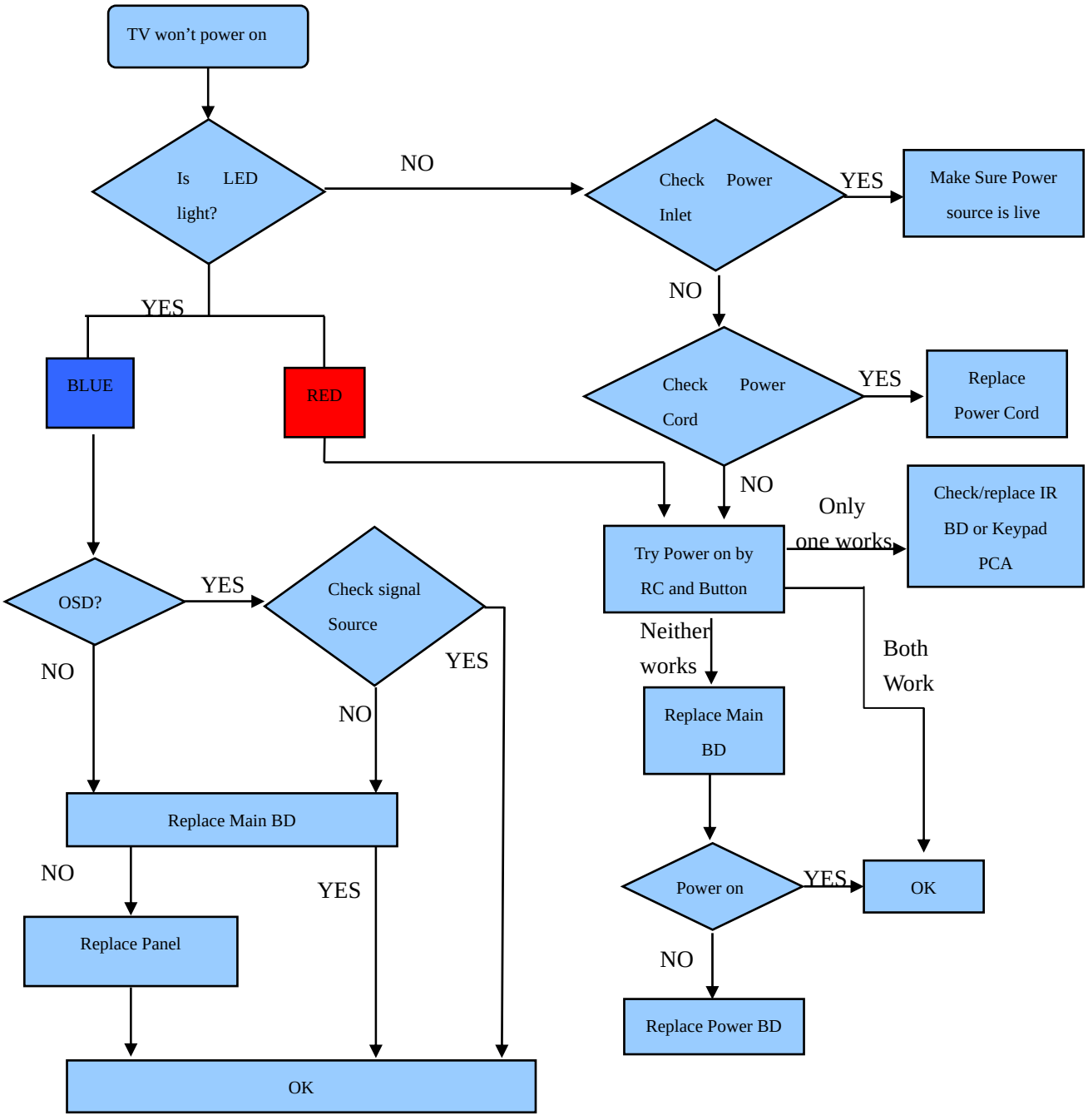
5.1 Troubleshooting for Remote Control



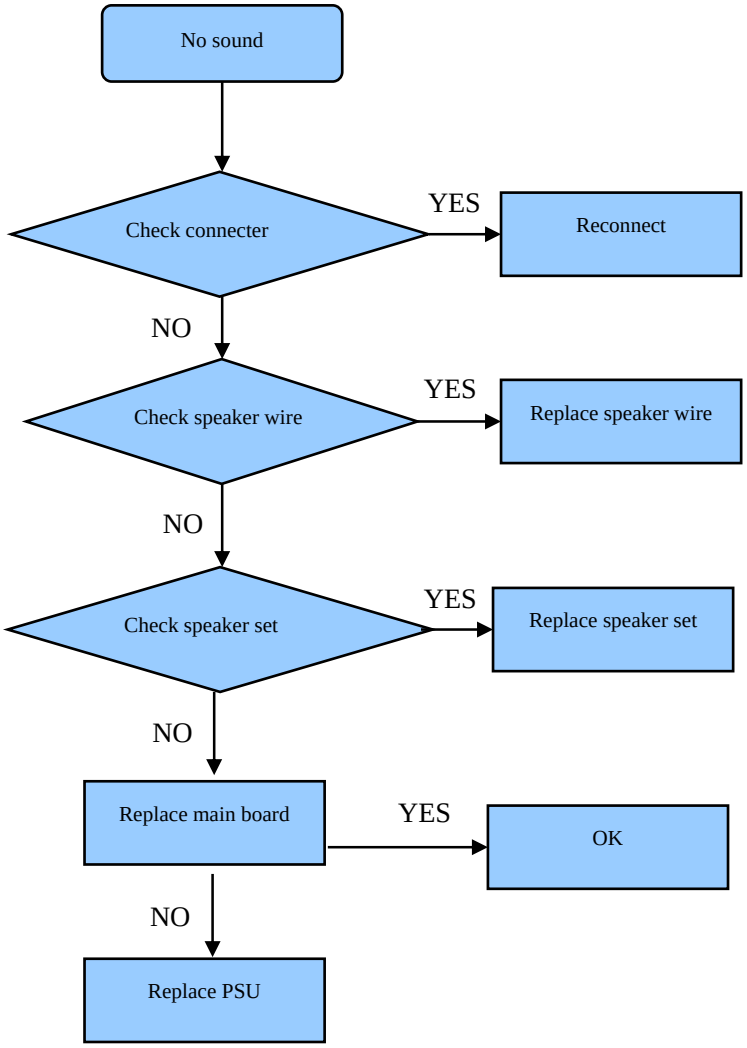
5.2 Troubleshooting for Function Key



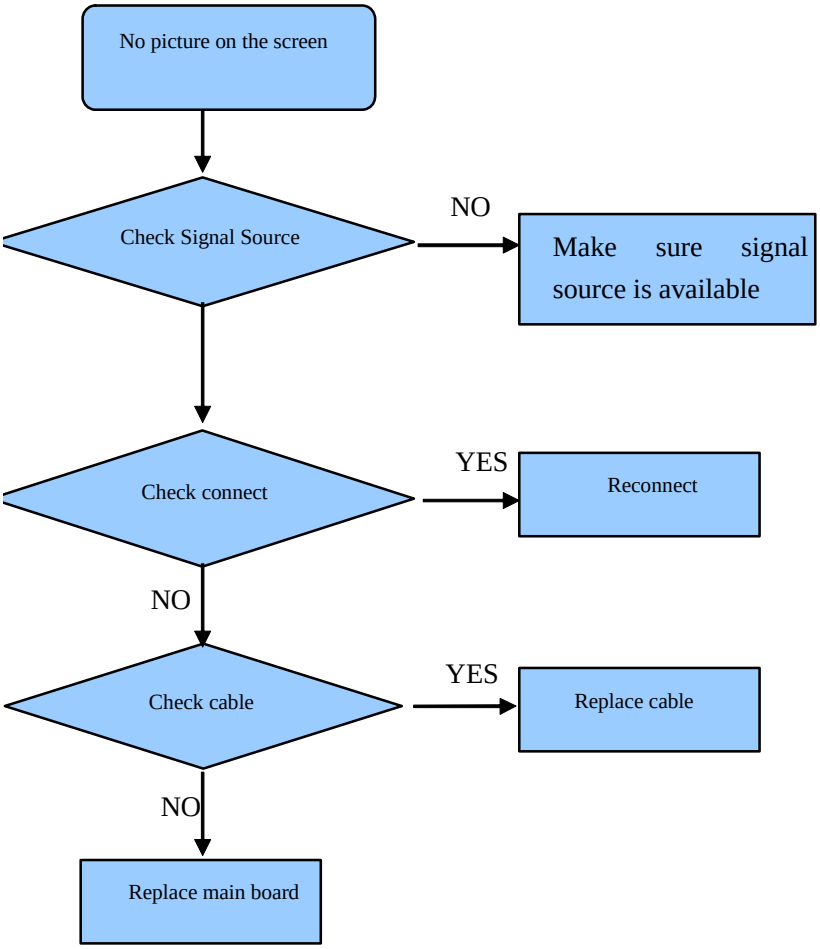
5.3 TV won’t Power On



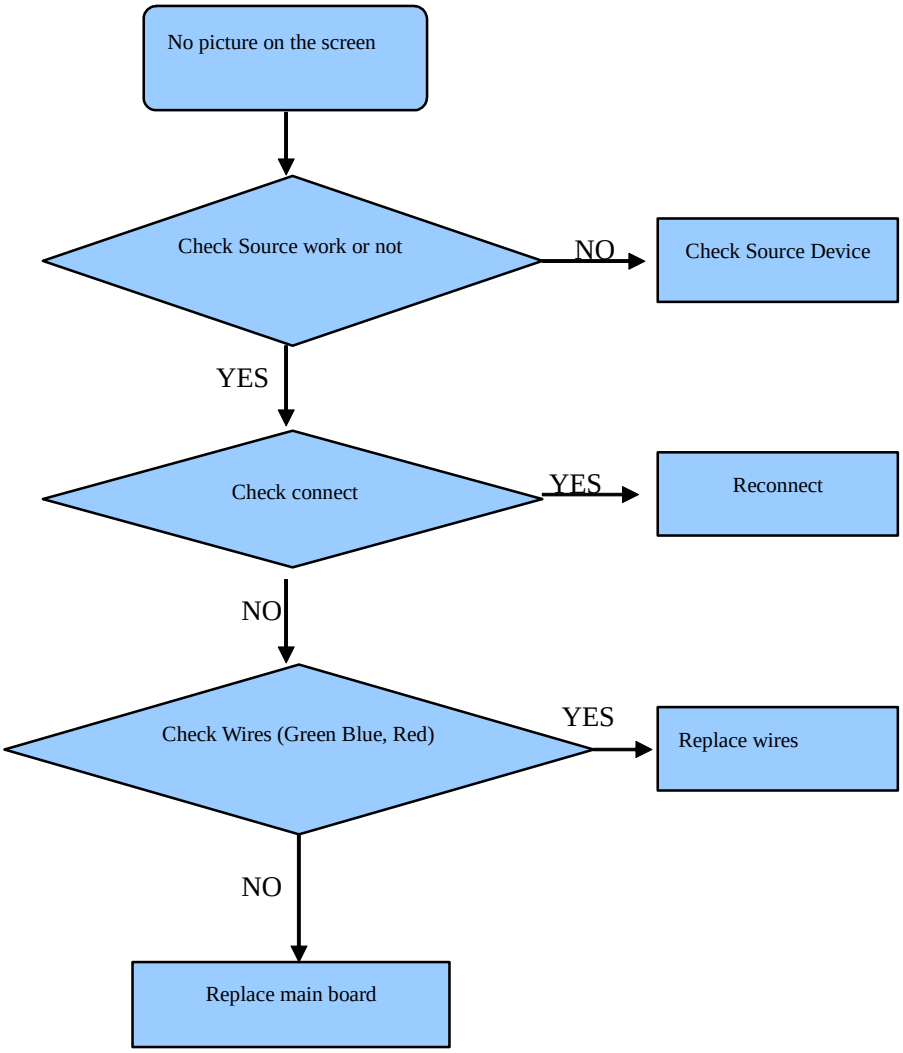
5.4 Troubleshooting for Audio



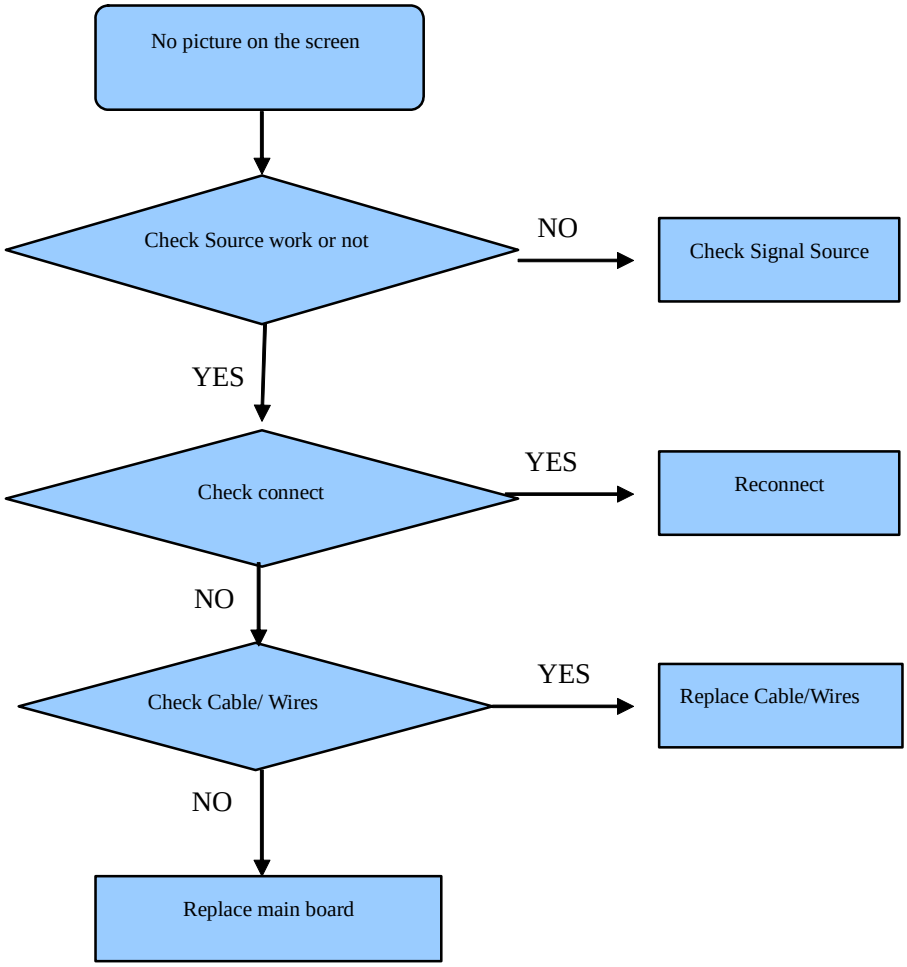
5.5 Troubleshooting for TV/VGA/HDMI input



5.6 Troubleshooting for YPbPr input

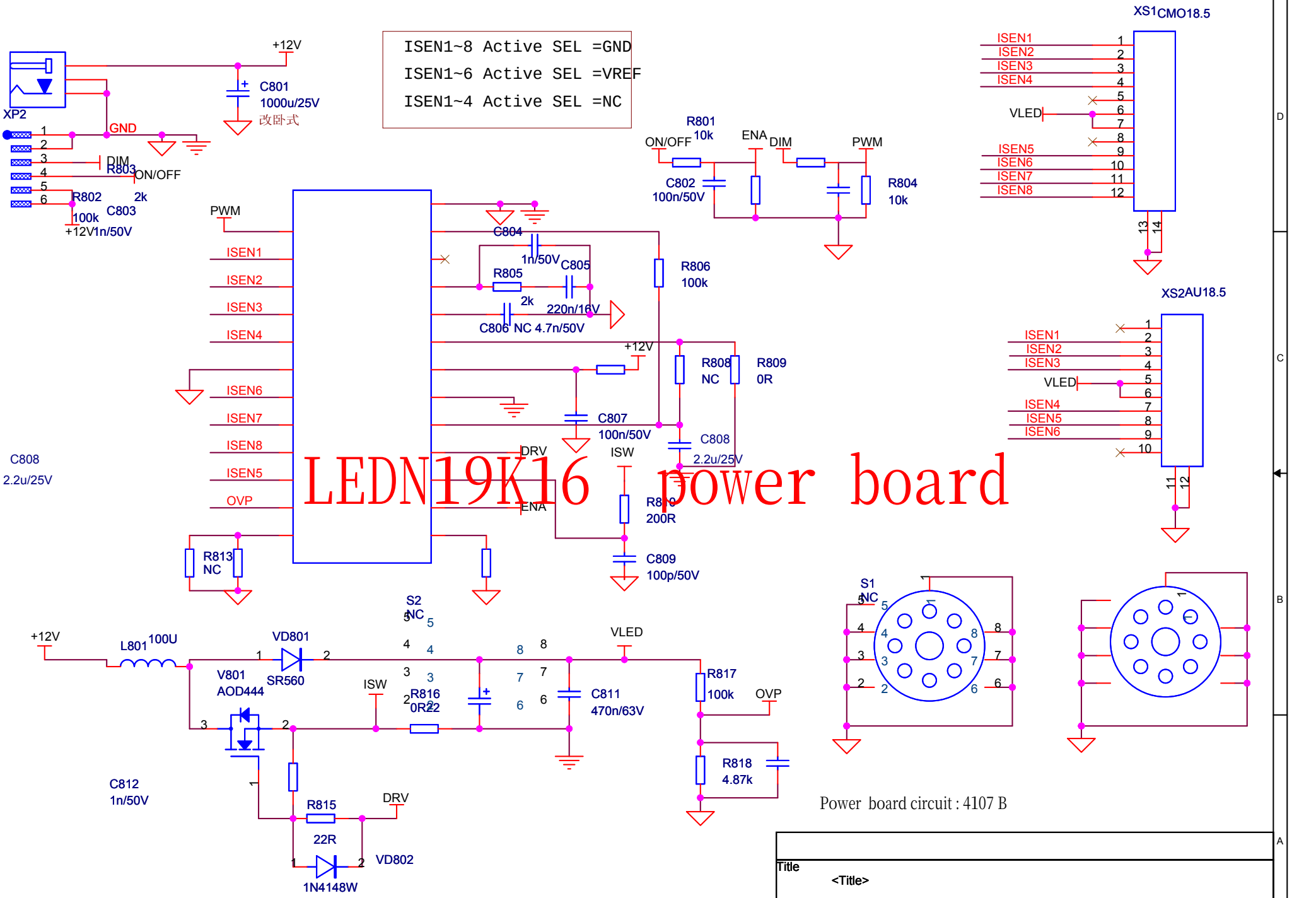


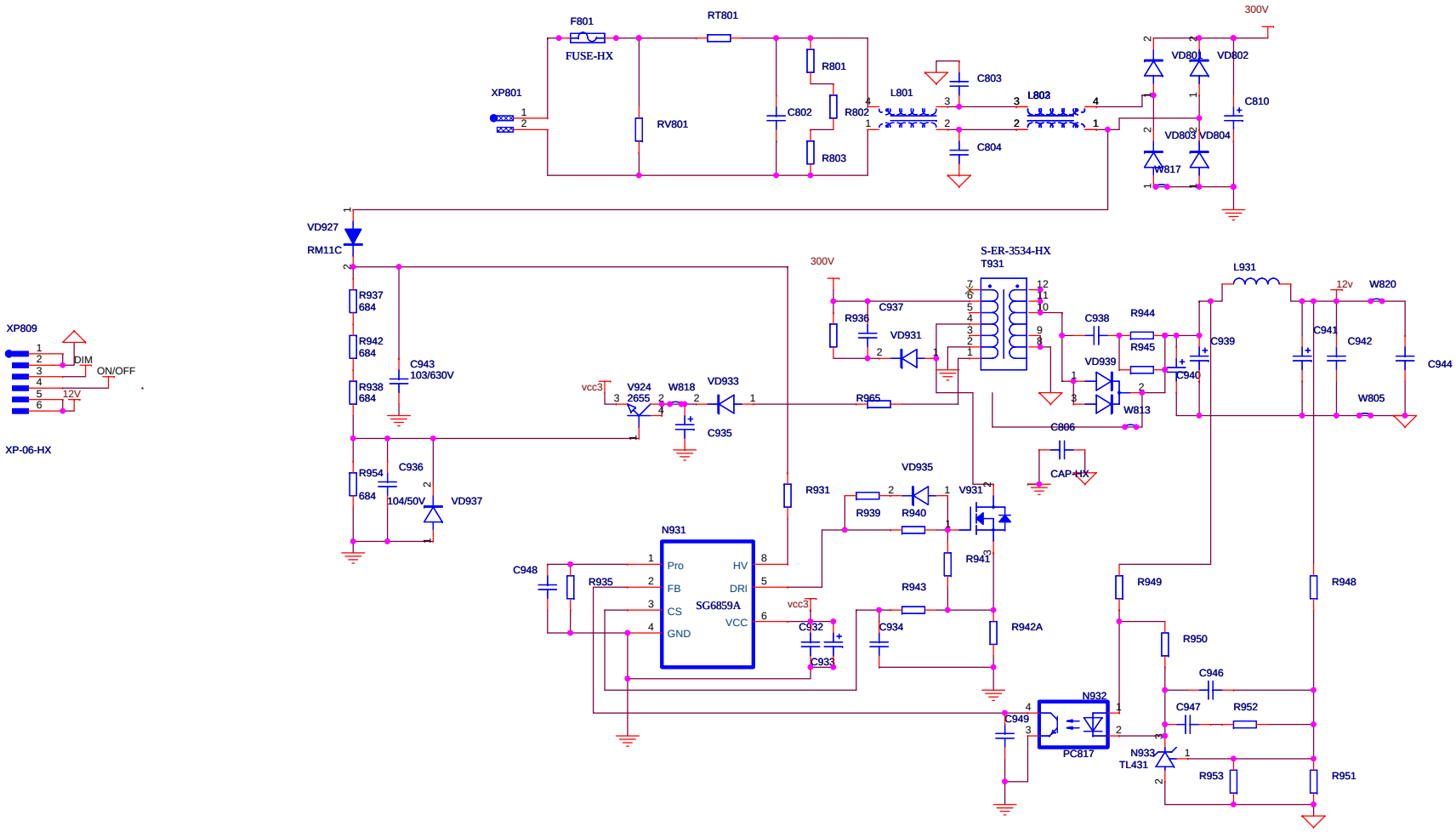
5.7 Troubleshooting for Video/ input



6. Schematic circuit diagram

7. Explode View


ISEN1~8 Active SEL =GND
ISEN1~6 Active SEL =VREF
ISEN1~4 Active SEL =NC
LEDN19K16 power board
XP2
+12V
GND
DIM
ON/OFF
C801
1000u/25V
改卧式
R802
100k
C803
2k
1n/50V
R803
R801
10k
C802
100n/50V
R804
10k
ENA
DIM
PWM
XS1CMO18.5
XS2AU18.5
ISEN1
ISEN2
ISEN3
ISEN4
ISEN5
ISEN6
ISEN7
ISEN8
VLED
OVP
C804
1n/50V
C805
220n/16V
R805
2k
C806 NC 4.7n/50V
R806
100k
R808
NC
R809
0R
C807
100n/50V
C808
2.2u/25V
R810
200R
C809
100p/50V
R813
NC
C808
2.2u/25V
S2
NC
S1
NC
L801
100U
VD801
SR560
V801
AOD444
ISW
R816
0R22
C811
470n/63V
R817
100k
R818
4.87k
C812
1n/50V
R815
22R
VD802
1N4148W
Power board circuit : 4107 B
ISW 0.48-06V OVER-CURRENT PROTECT
Title
<Title>
Size
A
Document Number
<Doc>
Rev
<RevCode>
Date:
Friday, June 11, 2010
Sheet
1
of
1



LEDN24K26P(1) power board :2256

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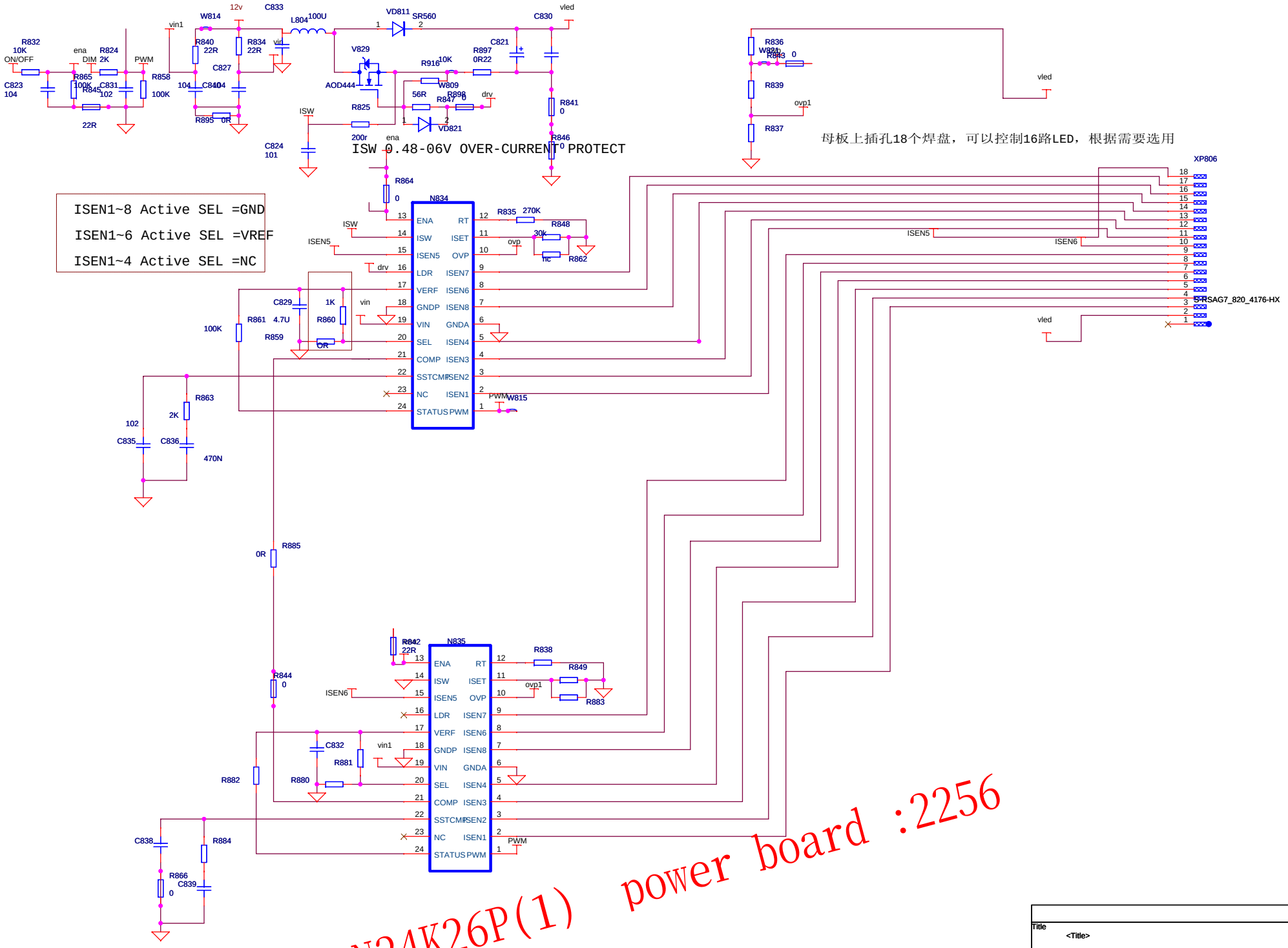
Size A3	Document Number <Doc>	Rev <RevCode>
Date: Friday, April 09, 2010	Sheet 1 of 1	



Title	<Title>	
Size A3	Document Number <Doc>	Rev <RevCode>
Date: Tuesday, July 27, 2010	Sheet 1 of 1	

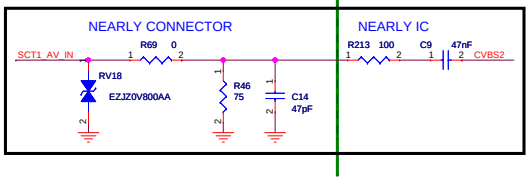
SCART 1 Full-SCT

XS1
SCART Connector VER

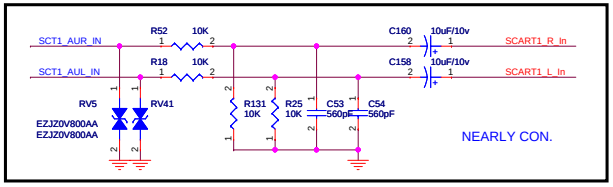
AUDIO_OUT_R	1	SCT1_AUR_OUT
AUDIO_IN_R	2	SCT1_AUR_IN
AUDIO_OUT_L	3	SCT1_AUL_OUT
GND_Audio_3	4	
GND_Blue_4	5	SCT1_GB_GND
AUDIO_IN_L	6	SCT1_AUL_IN
Blue_I/O_6	7	SCT1_B_IN
FS	8	SCT1_FS_IN
GND_Green_8	9	SCT1_GB_GND
Commas data2_9	10	
Green_I/O_10	11	SCT1_G_IN
Comms data1_11	12	
GND_Red_12	13	SCT1_R_GND
GND_Blanking_13	14	
Red_I/O_14	15	SCT1_R_IN
Fast_Blanking_15	16	SCT1_FB_IN
GND_Video_OUT_16	17	SCT1_AVO_GND
GND_Video_IN_17	18	SCT1_AVI_GND
VIDEO_OUT_Composite_18	19	SCT1_AV_OUT
VIDEO_IN_Composite_19	20	SCT1_AV_IN
Common_GND_20	21	

YC:Y-CVBS,C-SCT1_R_IN

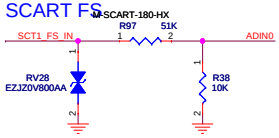
SCART CVBS Input



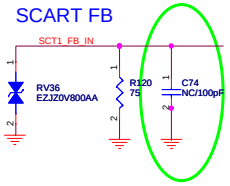
SCART Audio Input



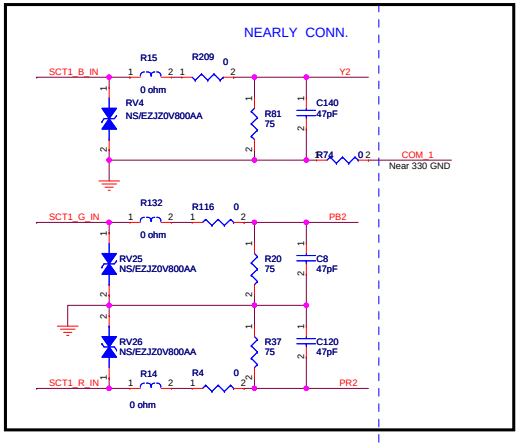
SCART FS

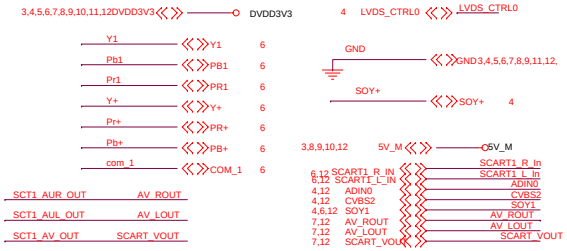


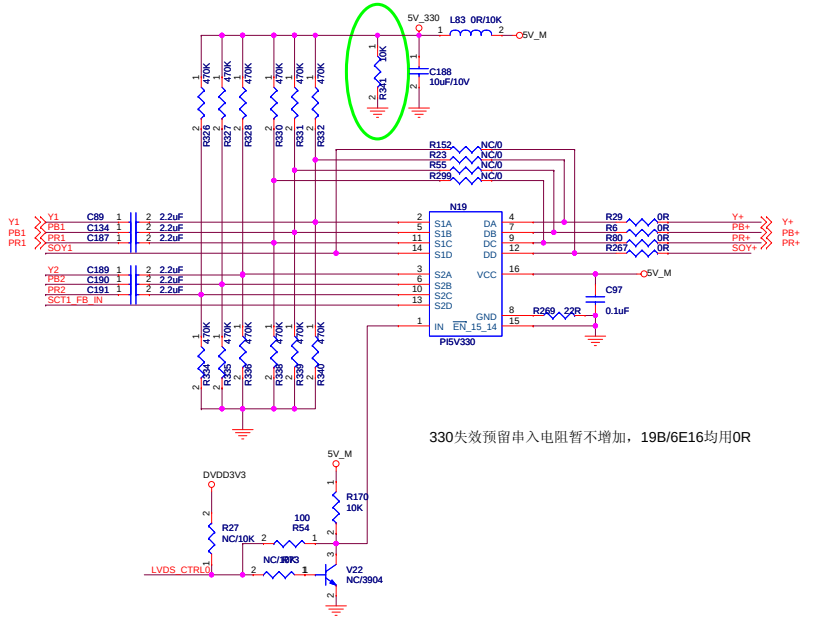
SCART FB



SCART RGB Format Video Input



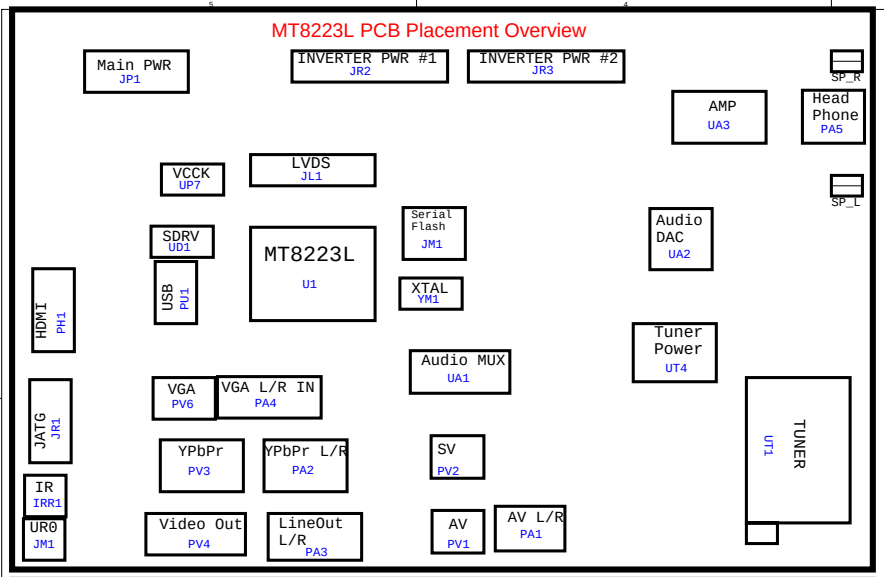




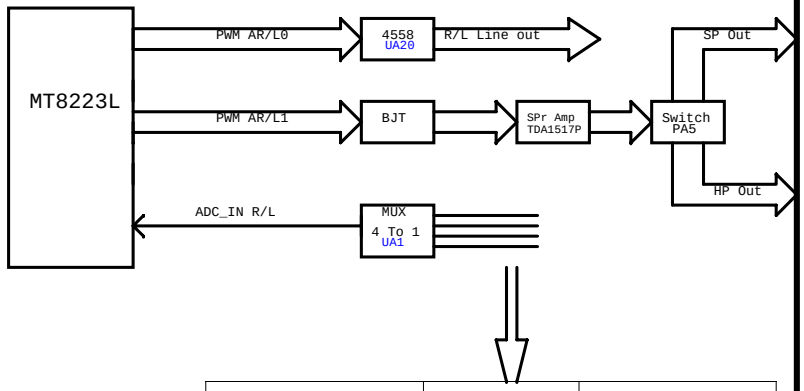
330失效预留串入电阻暂不增加，19B/6E16均用0R

Title	<Title>	
Size C	Document Number <Doc>	Rev <RevCode>
Date: Wednesday, December 14, 2011	Sheet 1 of 1	

MT8223L PCB Placement Overview

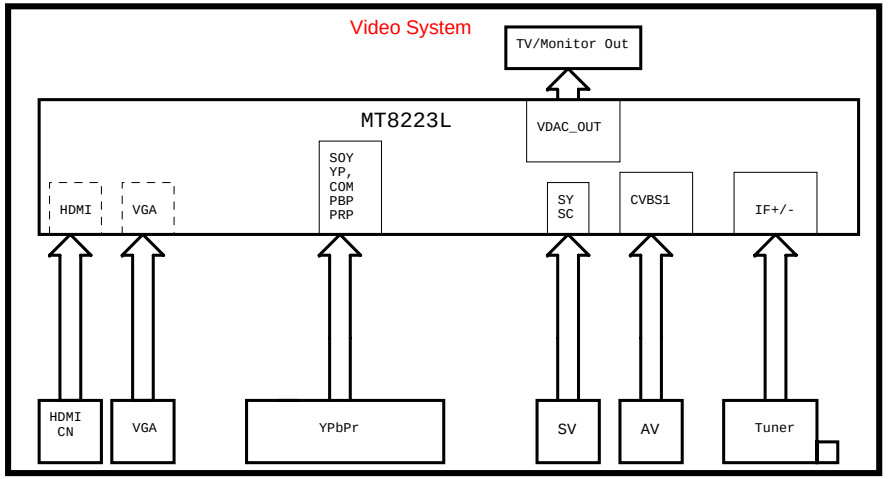


Audio System



Audio Source	U1TX	U1RX
AV1/S-V	H	H
YPBPR	L	H
VGA	L	L

Video System



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Title: Placement/Sys Flow

Size: C | Document Number: MT8223LM1V1 EVB | Drawn: Max Yang | Rev: 0.1

Date: Wednesday, December 14, 2011 | Sheet 1 of 12

遥控红蓝灯

遥控红蓝灯

Rev	History	P#	DATE
V0.1	INITIAL VERSION		
V0.2	AV out部分 1、C25由NS/47pF==>NS/100pF 2、C5由47pF==>330pF 3、R301 0ohm删掉，直接连铜线 YPbPr/VGA input部分： 1、R176、166、164由0ohm==>80ohm/100MHz 2、R236、214、206由0ohm==>80ohm/100MHz Tuner_5V: 1、增加C121=4.7uF 2、增加R264=100ohm/100Mhz Tuner_30V： 1、增加预留C128=NS/4.7uF Tuner 部分： 1、C121、C134_10nF_去掉 2、R271\R282 由 20ohm 变为 0ohm 3、C6由NS变为0.1uF 4、C1由NS变为4.7uF 5、C79、C56由39pF变成56pF 6、增加C59=NS/0.1uF 电源部分： R304删除		
V0.3	BPF update 1、C75、C72由10ohm==>33ohm 2、C187=390pF变成R323=68ohm 3、C81、C89符号变成电阻R324、R325=NS 4、R307、R315由27ohm==>33ohm 5、D50 82nh==>100nh		

Tuner引脚顺序

增加嵌位电路___20100107　　PI5V330部分更改如下：
1、R143\270\40\76\90\13\24\152 更改为电容符号 C89、134、187、189、190、191、=0.1uF，0603封装
2、增加嵌位电路R326、327、328、330、331、332、334、335、336、338、339、340=NS/10K；R270、143=NS/1K

更改遥控头插座5Pin==>8Pin,add R341/R342/D108/D142

更改按键插座3Pin==>4Pin,add R13/R24,add R76/R90

遥控指示灯处增加R40

D77删除,连接导线

add R152

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Title: GPIO Config/Modify List

Size: C | Document Number: MT8223LM1V1 EVB | Drawn: Max Yang | Rev: 0.1

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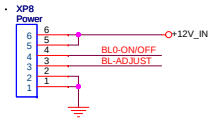
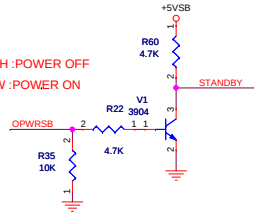
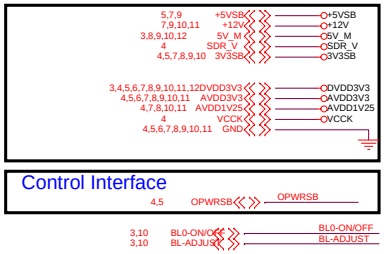
Main power & Amplifier

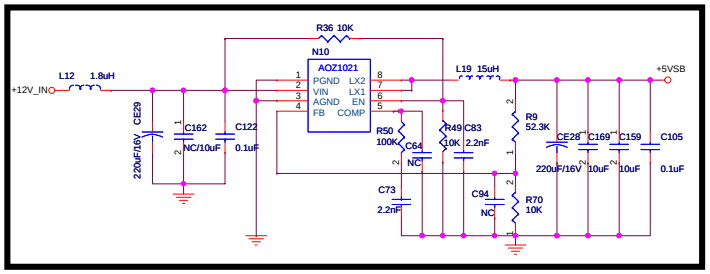


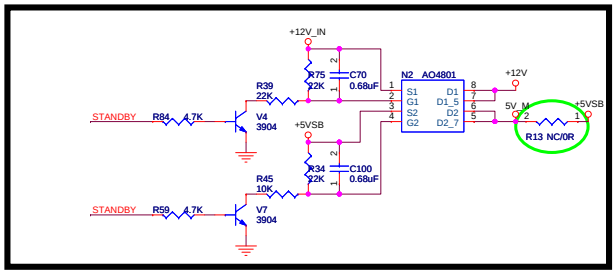
Q1 HIGH :POWER OFF
Q1 LOW :POWER ON



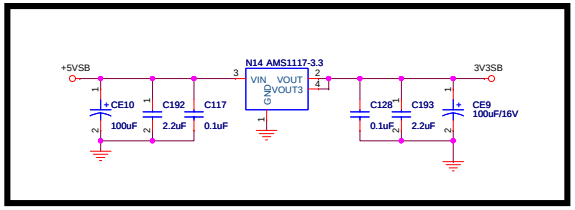


5V STANDBY

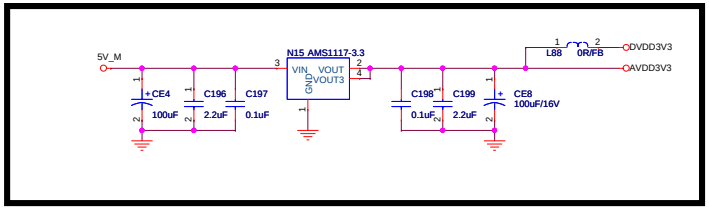


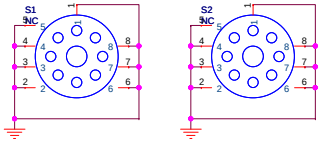


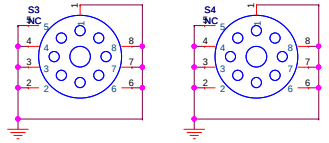
3V3 STANDBY



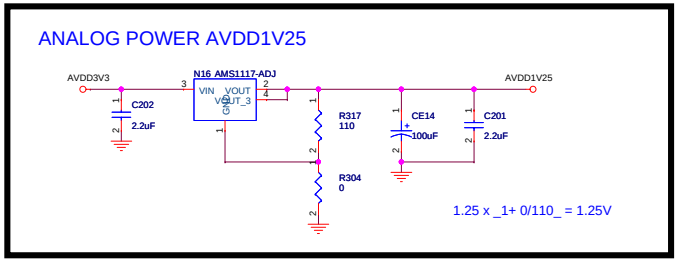
ANALOG POWER AVDD3V3



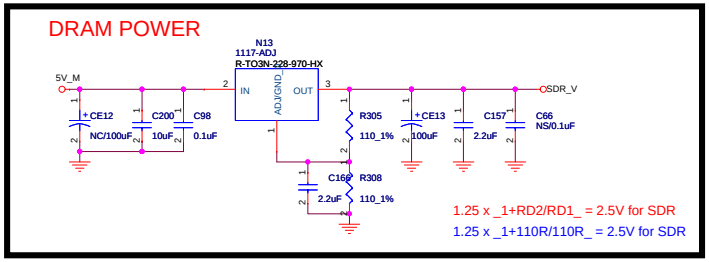




ANALOG POWER AVDD1V25

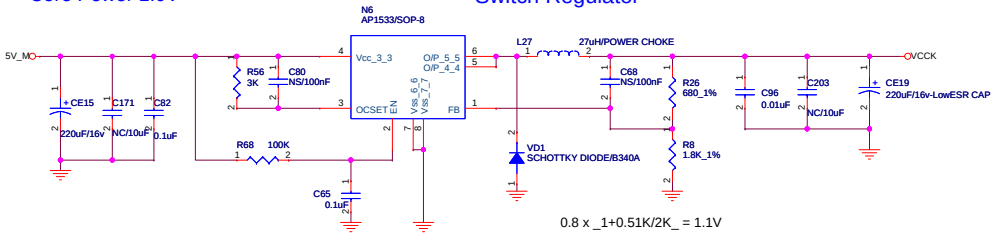


DRAM POWER



Core Power 1.0V

Switch Regulator



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Title: System Power			
Size: C	Document Number: MT8223LM1V1 EVB	Drawn: Max Yang	Rev: 0.1
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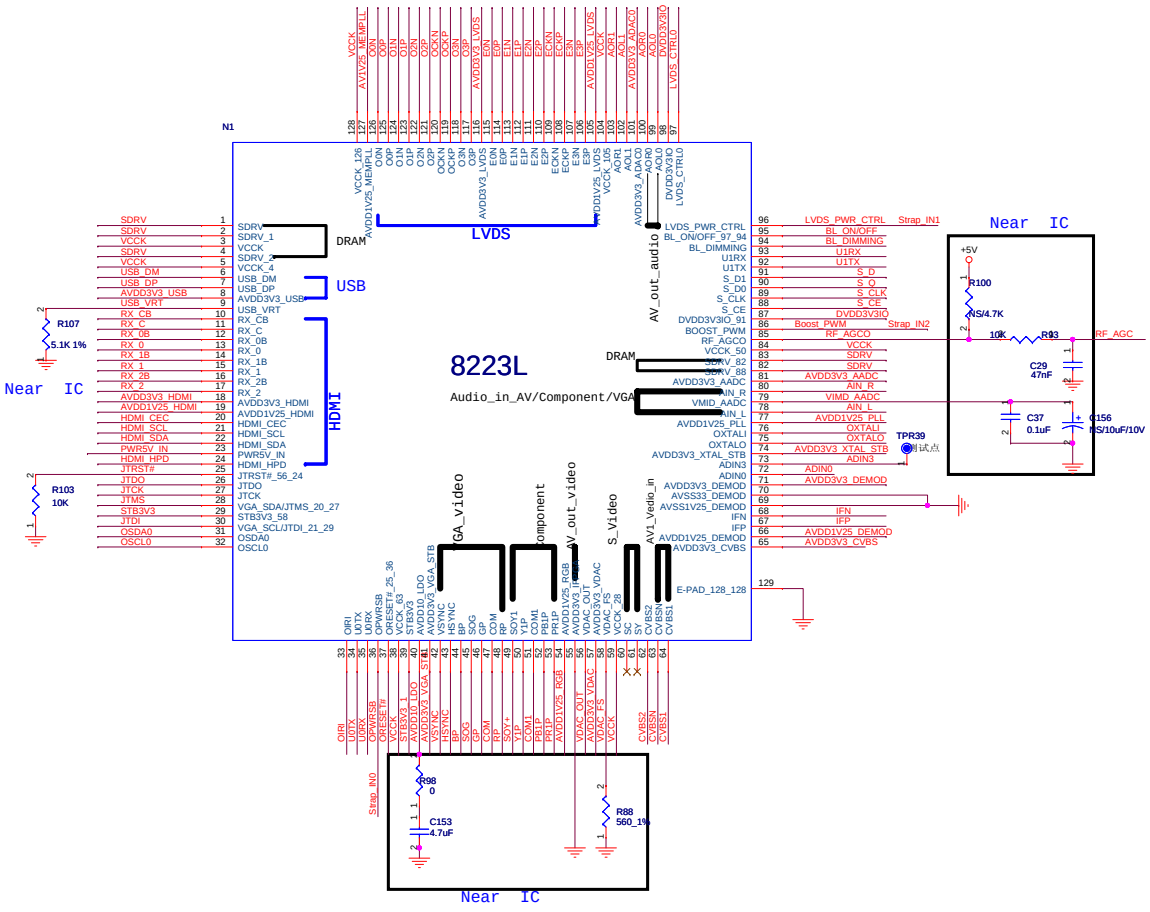
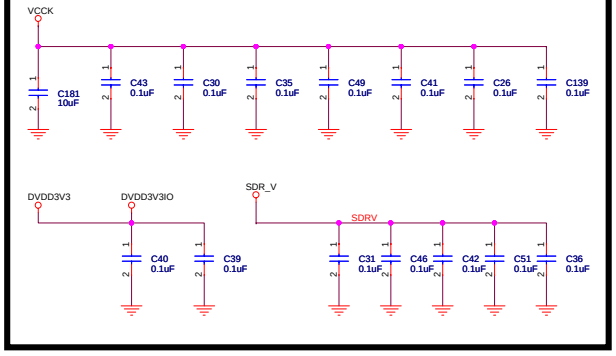
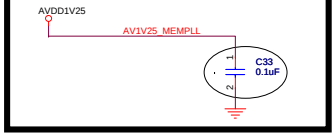


BYPASS CAP

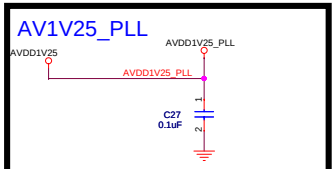
Near IC Pin



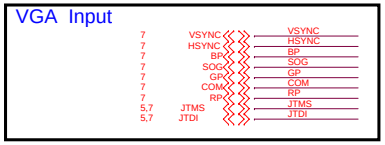
AV1V25_MEMPLL



AV1V25_PLL

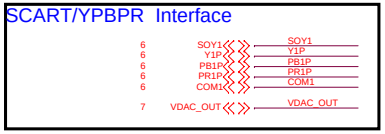


VGA Input

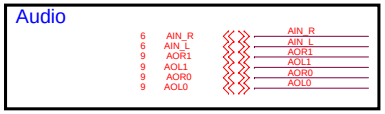


Video Input

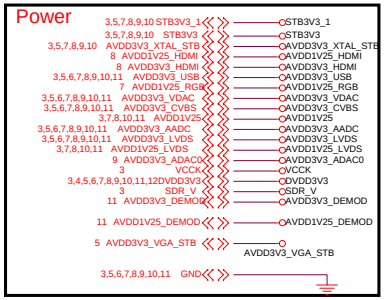
SCART/YPBPR Interface



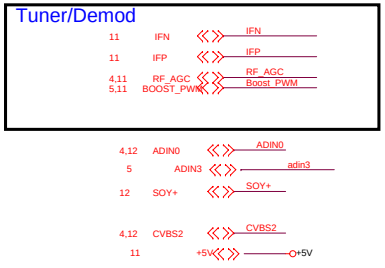
Audio



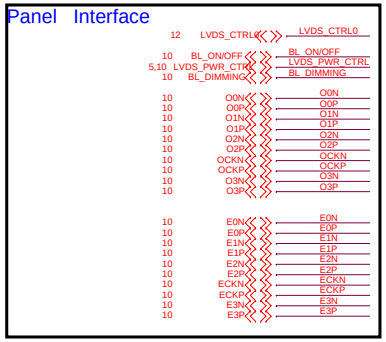
Power



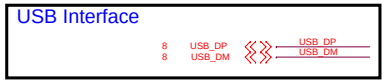
Tuner/Demod



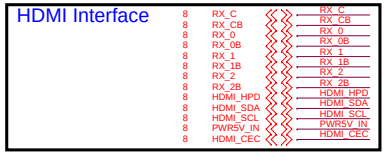
Panel Interface



USB Interface

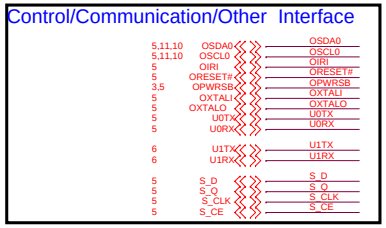


HDMI Interface



JTAG Interface

Control/Communication/Other Interface



HW Strap Setting

MediaTek Inc.
No.1-2, Innovation Rd 1, SBIP, Hsin-Chu City 300
TEL: 03 567-0766 FAX: 03 578-7610

Title: Main Chip/Bypass Cap			
Size: Custom	Document Number: MT8223LM1V1 EVB	Drawn: Max Yang	Rev: 0.1
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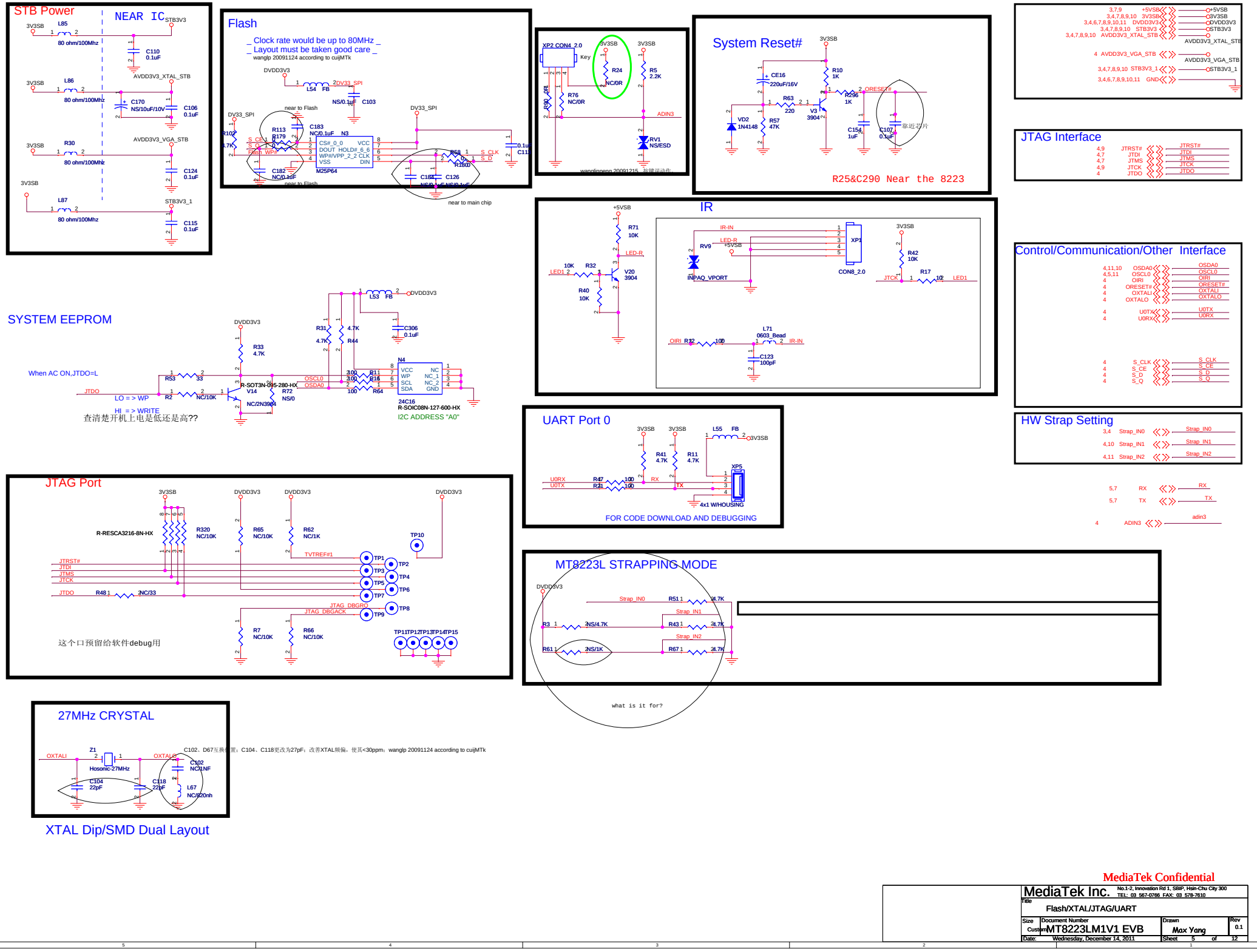
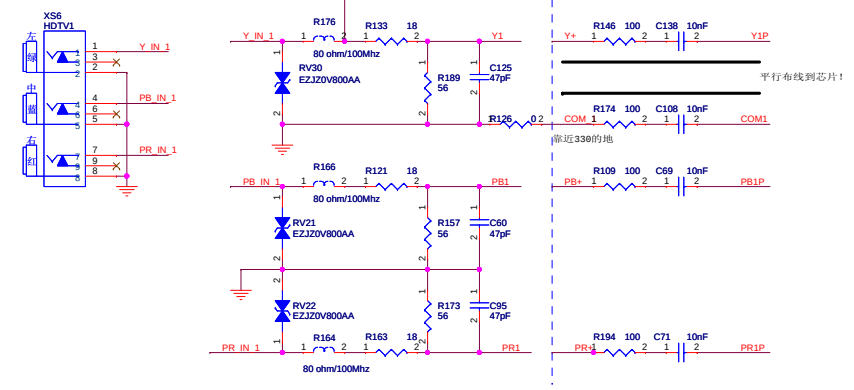
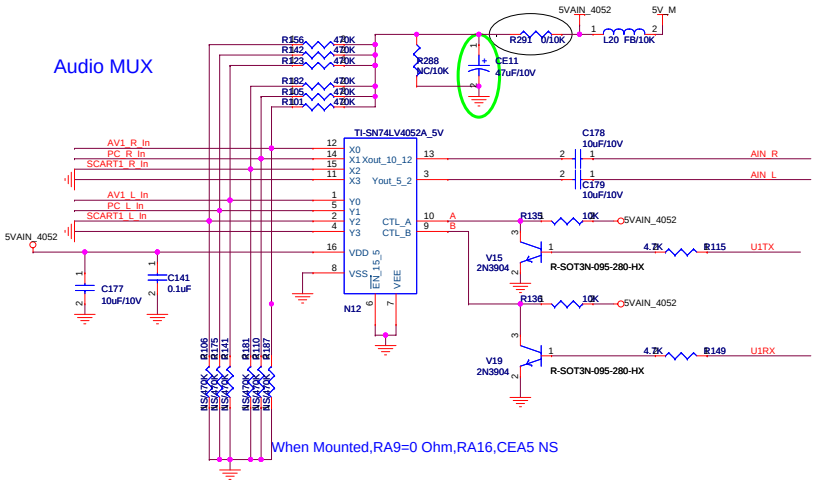

STB Power
NEAR IC
Flash
_ Clock rate would be up to 80MHz _
_ Layout must be taken good care _
wanglp 20091124 according to cuijMTk
System Reset#
R25&C290 Near the 8223
IR
JTAG Interface
Control/Communication/Other Interface
HW Strap Setting
SYSTEM EEPROM
When AC ON,JTDO=L
JTDO
LO => WP
HI => WRITE
查清楚开机上电是低还是高??
I2C ADDRESS "A0"
UART Port 0
FOR CODE DOWNLOAD AND DEBUGGING
JTAG Port
这个口预留给软件debug用
MT8223L STRAPPING MODE
what is it for?
27MHz CRYSTAL
C102、D67互换位置；C104、C118更改为27pF；改善XTAL频偏，使其<30ppm：wanglp 20091124 according to cuijMTk
XTAL Dip/SMD Dual Layout
MediaTek Confidential
MediaTek Inc.
No.1-2, Innovation Rd 1, SBIP, Hsin-Chu City 300
TEL: 03 567-0766 FAX: 03 578-7610
Flash/XTAL/JTAG/UART
MT8223LM1V1 EVB
Max Yang
Wednesday, December 14, 2011

YPbPr Video Input NEARLY YPBPR CON. NEARLY IC

HDTV

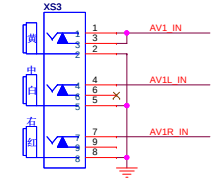


Audio MUX

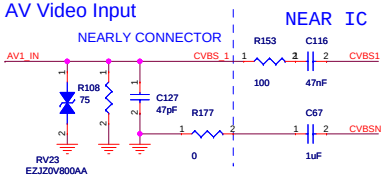


Audio Source	U1TX	U1RX
AV1/S-V	H	H
YPBPR	L	H
VGA	L	L

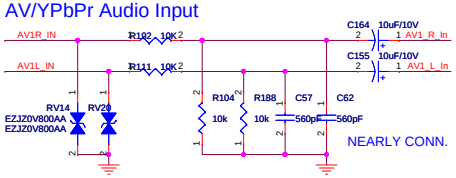
AV_input

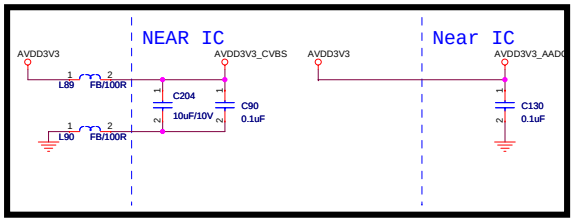


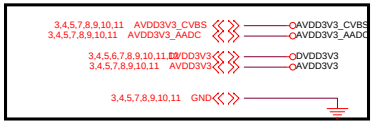
AV Video Input

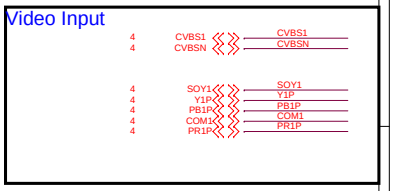


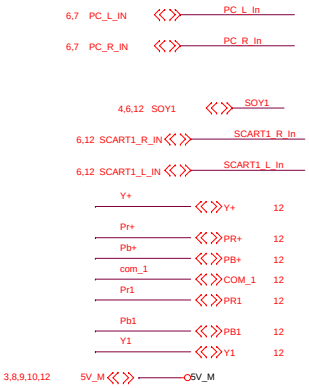
AV/YPbPr Audio Input











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MediaTek Inc. No.1-2, Innovation Rd 1, SBIP, Hsin-Chu City 300 TEL: 03_567-0766 FAX: 03_578-7610			
Title: AV/S-V/YPbPr/Audio MUX			
Size: C	Document Number: MT8223LM1V1 EVB	Drawn: Max Yang	Rev: 0.1
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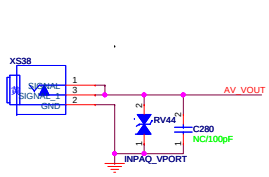
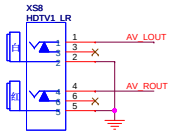
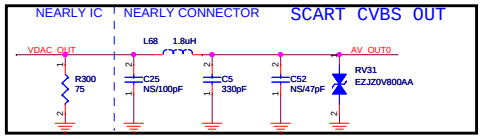
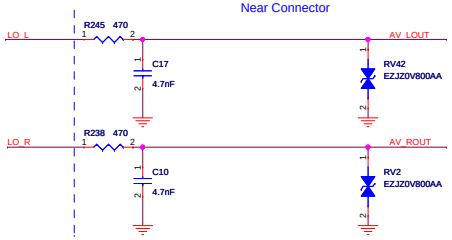
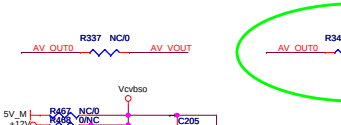
AV output

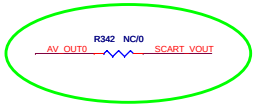


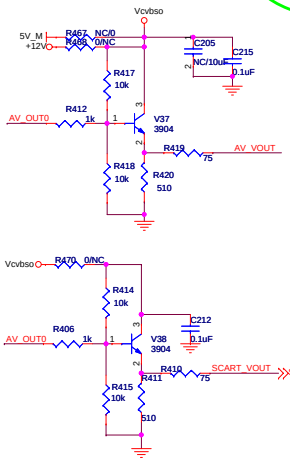


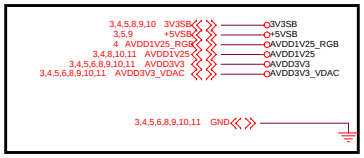












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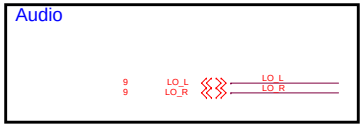
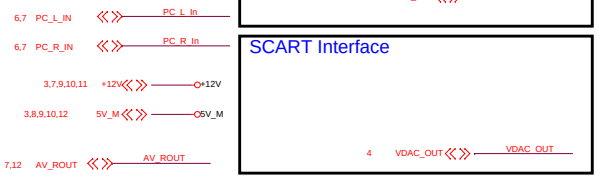
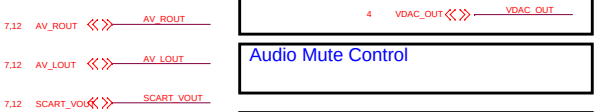


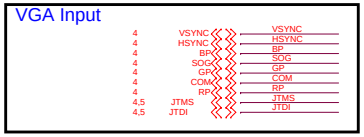
SCART Interface



Audio Mute Control

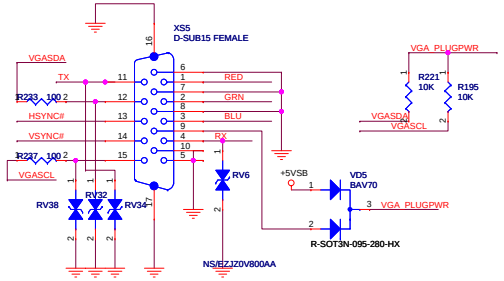


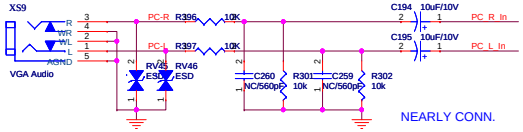
VGA Input



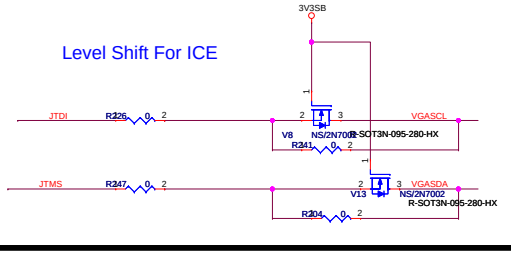
VGA CONNECTOR

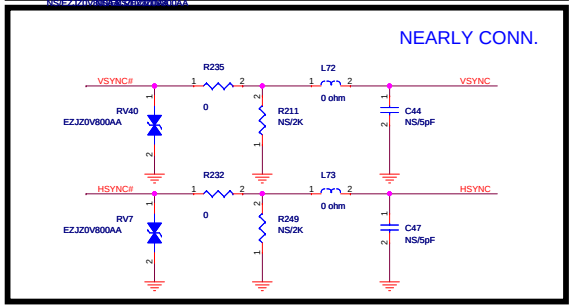
增加VGA升级口\VGA采用薄型新端子

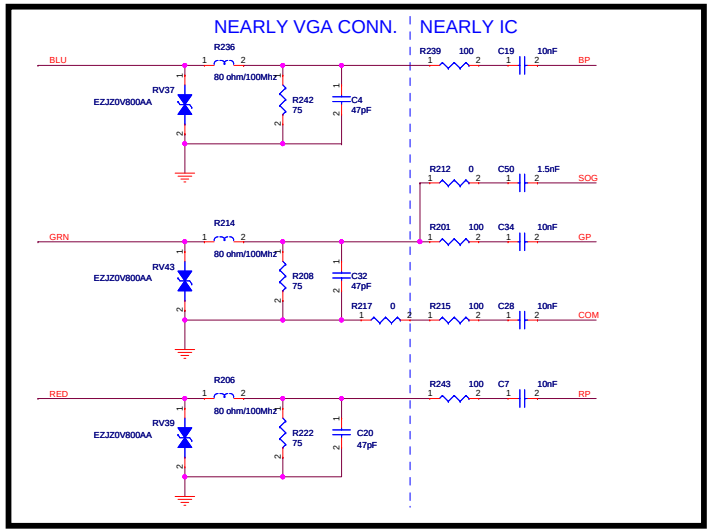


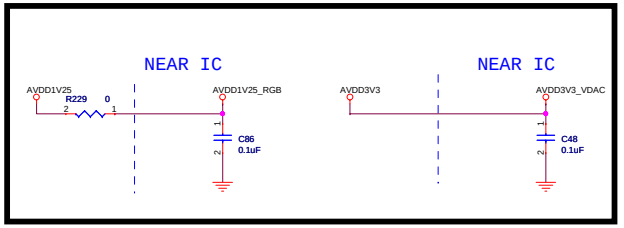


Level Shift For ICE









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Title: SCART/VGA			
Size: Custom	Document Number: MT8223LM1V1 EVB	Drawn: Max Yang	Rev: 0.1
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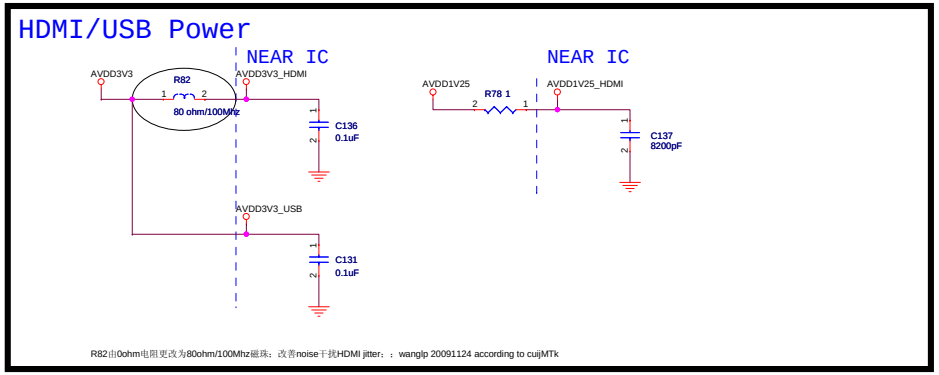

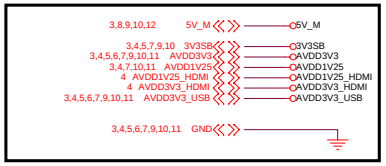

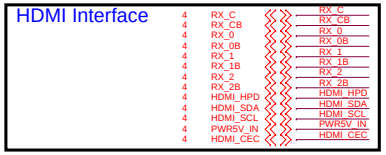

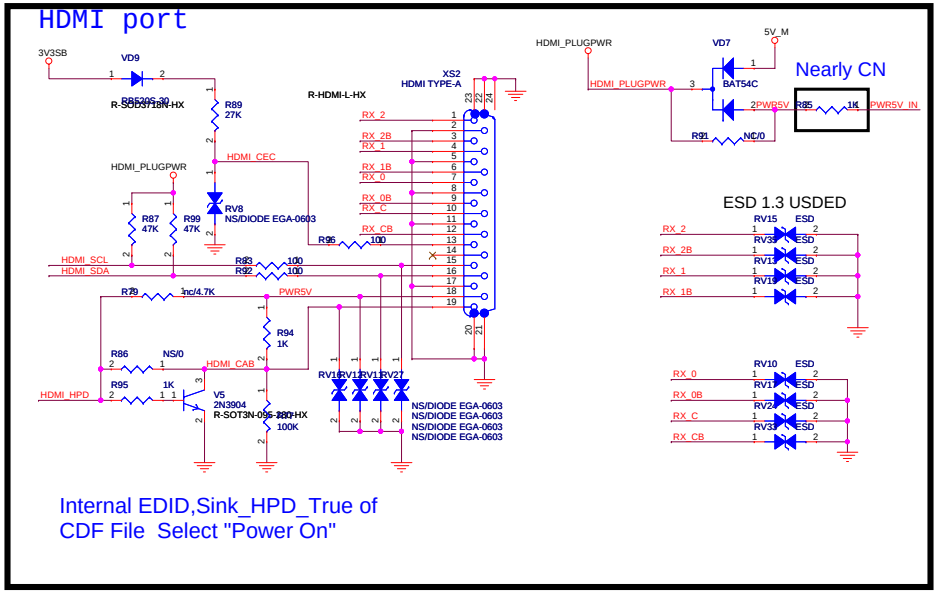

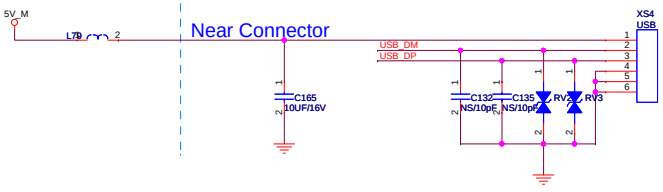

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MediaTek Inc. No.1-2, Innovation Rd 1, SBIP, Hsin-Chu City 300 TEL: 03 567-0766 FAX: 03 578-7610			
Title: HDMI/USB			
Size: C	Document Number: MT8223LM1V1 EVB	Drawn: Max Yang	Rev: 0.1
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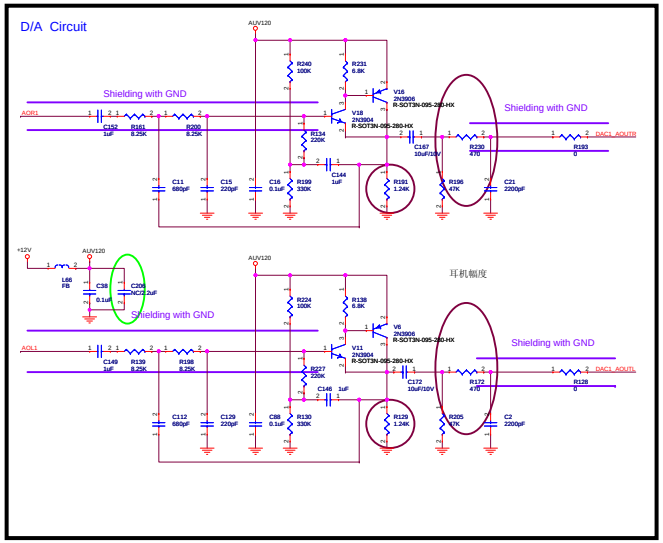
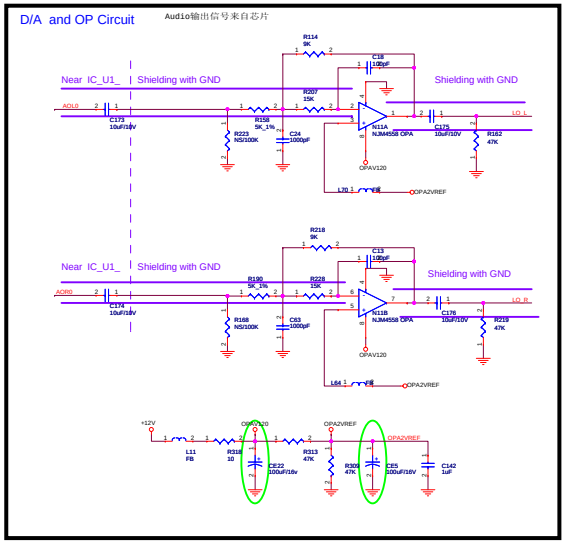
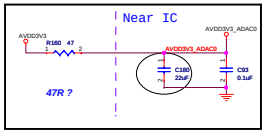
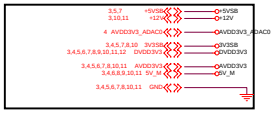


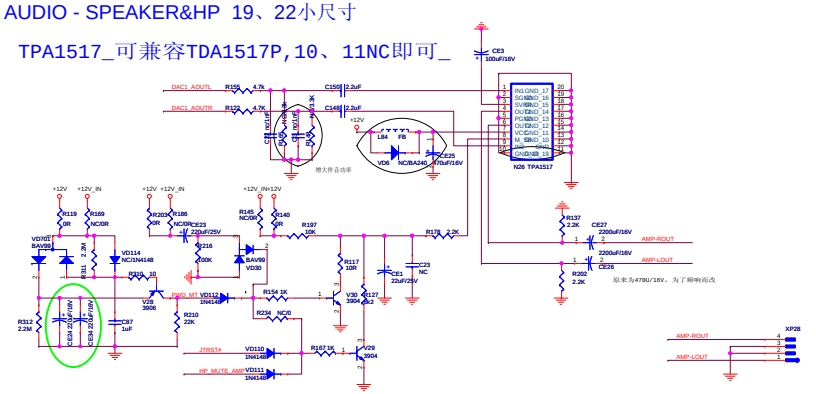


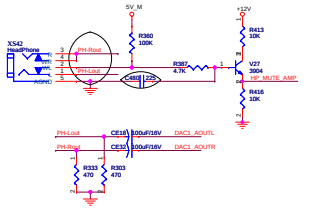




AUDIO - SPEAKER&HP 19、22小尺寸

TPA1517_可兼容TDA1517P,10、11NC即可_





MediaTek Inc.	No.1-2, Innovation Rd 1, SBIP, Hsin-Chu City 300 TEL: 03 567-0766 FAX: 03 578-7610		
Title: Speaker/HP/Line out/Mute			
Size: D	Document Number: MT8223LM1V1 EVB	Drawn: Max Yang	Rev: 0.1
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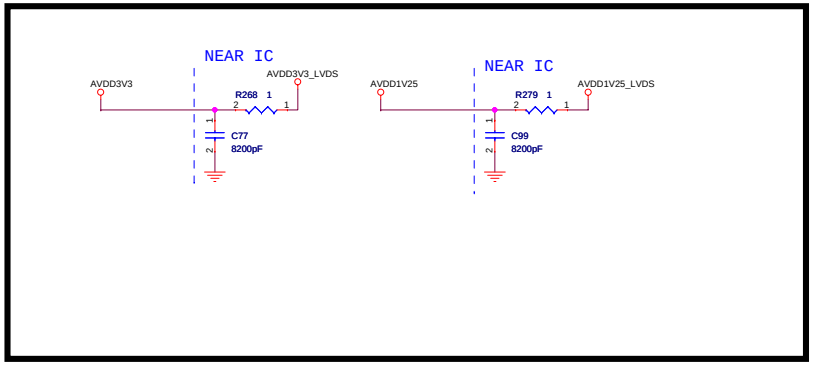

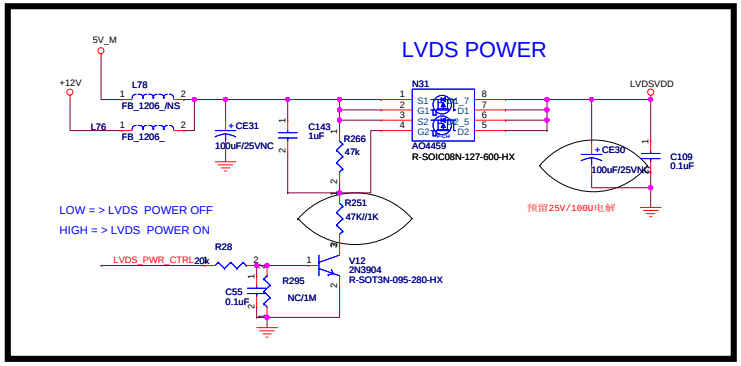

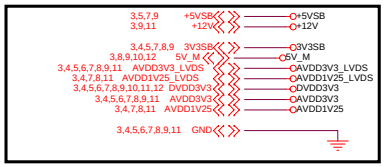

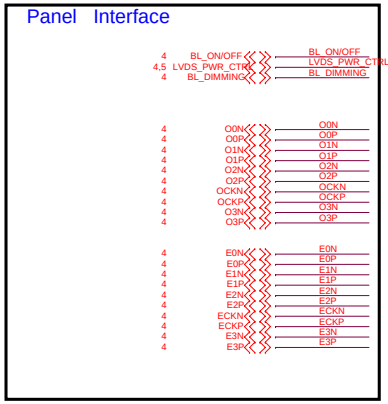

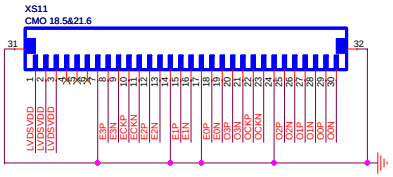

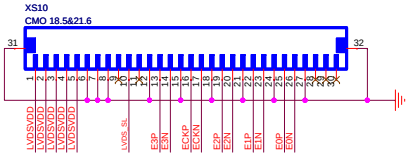

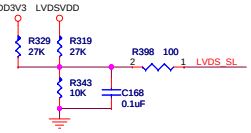

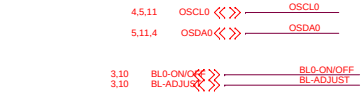

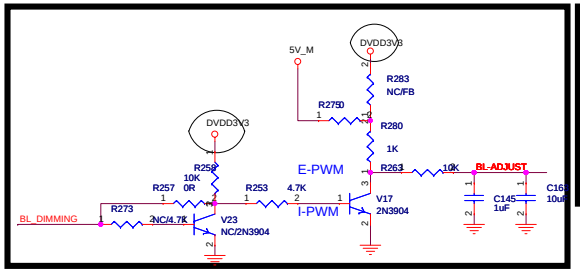

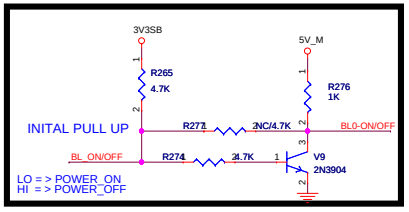

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Title: LVDS/Back Light			
Size: C	Document Number: MT8223LM1V1 EVB	Drawn: Max Yang	Rev: 0.1
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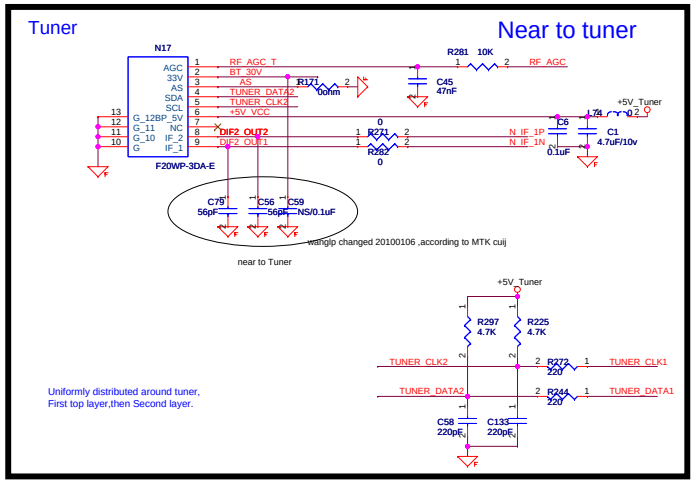

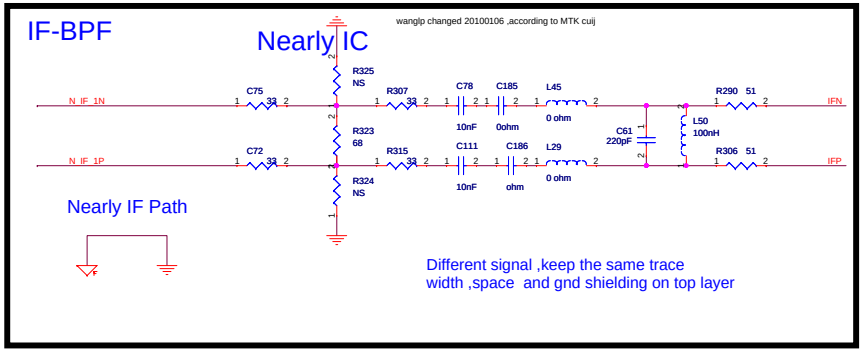

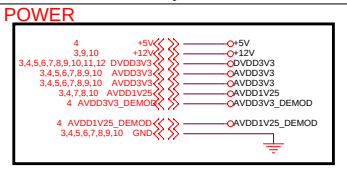

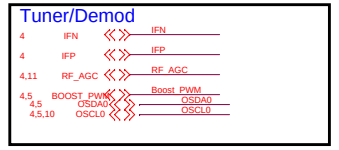

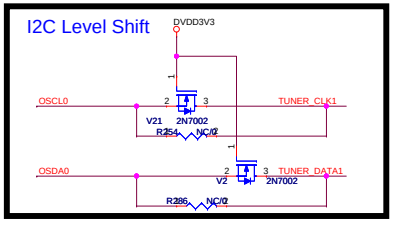

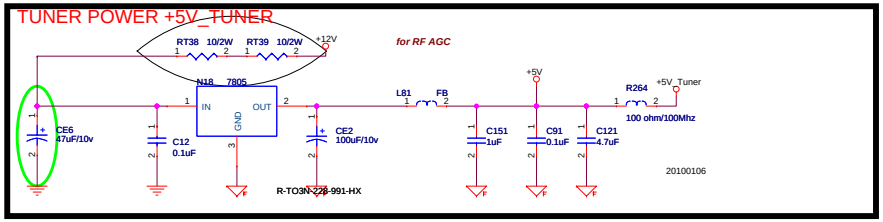

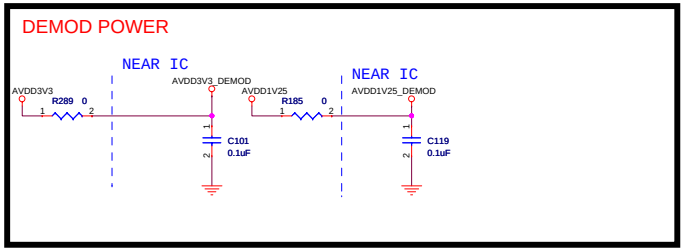

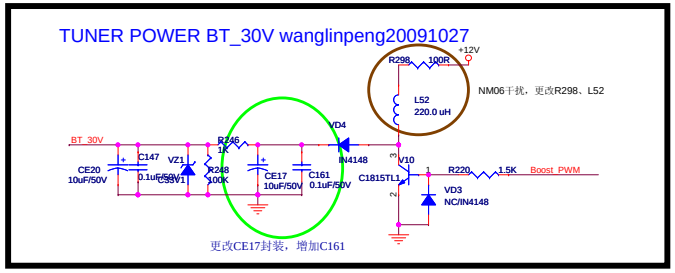

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MediaTek Inc. No.1-2, Innovation Rd 1, SBIP, Hsin-Chu City 300 TEL: 03 567-0766 FAX: 03 578-7610			
Title: Tuner			
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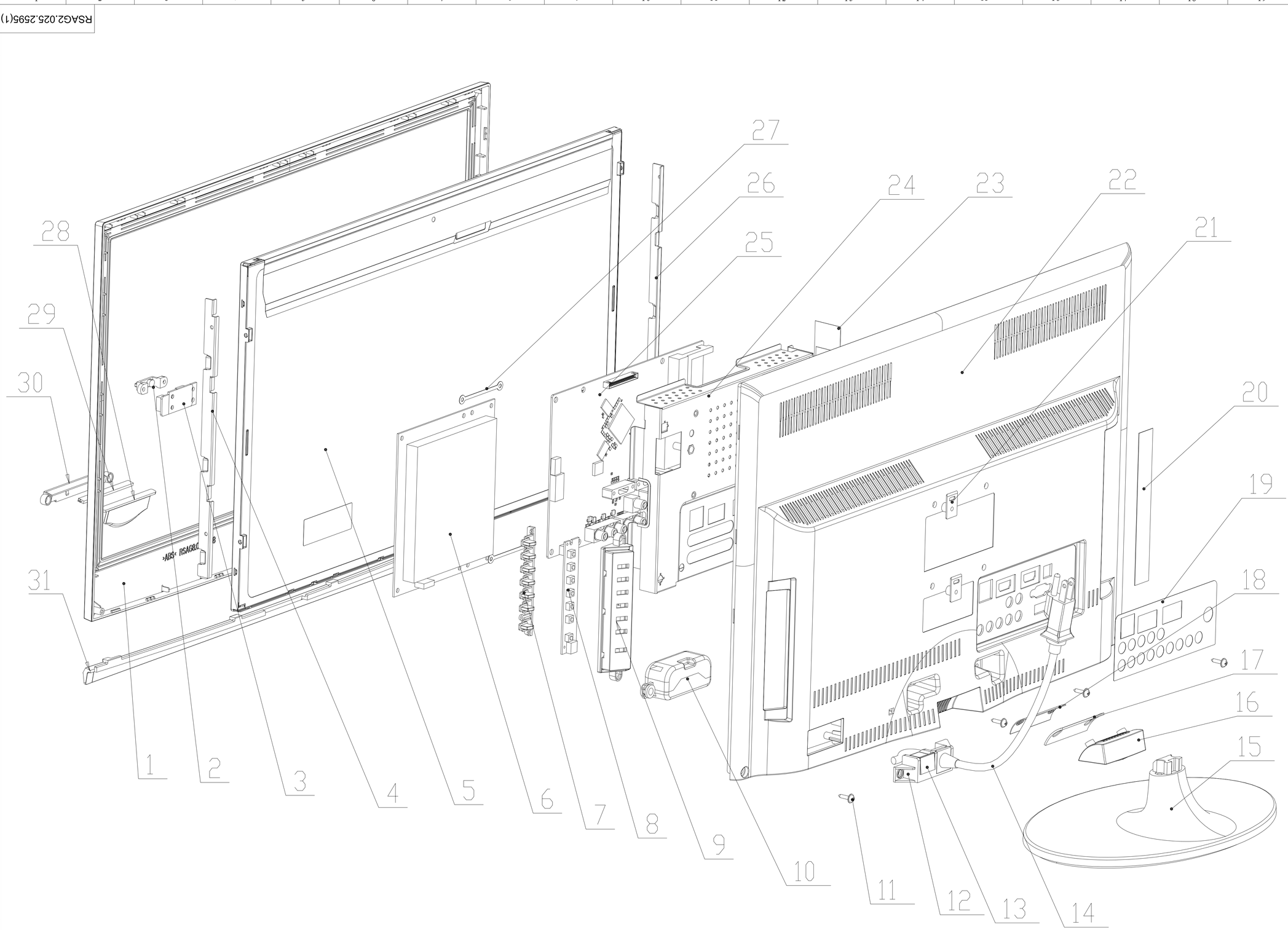
Date: Wednesday, December 14, 2011		Sheet 11 of 12	

RSAG2.025.2595(1)



No.	Description	Qty.	Code No.	Remark
38				
37				
36				
35				
34				
33				
32				
31	Decoration	1	RSAG8.647.405\ROH\X0	
30	Bracket Unit	1	RSAG8.078.931\ROH\X0	
29	Lens Board	1	BC-7206R-01-350\JK\ROH	
28	Decoration	1	RSAG8.647.408\ROH\X0	
27	Bracket Unit	2	RSAG8.038.2485\ROH	
26	Bracket Unit	1	RSAG8.038.2453\ROH	
25	Main Board	1	RSAG2.908.1974\ROH	
24	Shield	1	RSAG6.150.814\ROH	
23	Label	1	RSAG8.804.4061\ROH	
22	Rear Cover	1	RSAG8.074.1206\M\V0\ROH\X0\投孔	
21	Bracket Unit	2	RSAG6.150.804\ROH	
20	Side Label	1	RSAG8.804.3760\ROH	
19	Bottom Label	1	RSAG8.804.3759\ROH	
18	Bracket Unit	1	RSAG8.038.2486\ROH	
17	Bracket Unit	1	RSAG8.600.171\ROH\X0	
16	Bracket Unit	1	RSAG8.078.946\ROH\X0	
15	Stand	1	RSAG6.121.0224\FB2\X0	
14	Power Cord	1	YS-3-8E-2\ROH	
13	Power Switch	1	HF-606(TV)-P通PS8-12-D-047B\ROH	
12	Bracket Unit	1	RSAG8.078.932\ROH\X0	
11	Screw	4	SJ2825-87 ST3X12C黑色\ROH\STD	
10	Speaker	1	VIT2255-5W8Ω-01\ROH	
9	Bracket Unit	1	RSAG8.078.938\ROH\X1	
8	Keypad PCA	1	RSAG2.908.1962\ROH	
7	Button	1	RSAG8.078.937\ROH\X0	
6	Power Board	1	RSAG2.908.2256-54\ROH	
5	LED Panel	1	V236H1-LE4\GS\JK\ROH	
4	Bracket Unit	1	RSAG8.038.2452\ROH	
3	IR Board	1	RSAG2.908.4193\ROH	
2	LED Lens	1	RSAG8.640.0213\ROH	
1	Front Cover	1	RSAG8.074.878\FB2\X1	

Explone

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